The Oil and Gas Journal

PUBLISHED WEEKLY BY THE
PETROLEUM PUBLISHING COMPANY
AT TULSA, OKLAHOMA

HOME OFFICE, 211 S. CHEYENNE, TULSA
PHONE 3-6291

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Table of Contents

Vol. 39, No. 18 — September 12, 1940

News Developments

Trends: Production Jumps as Southwest States Increase Allowables 21
Superhighways—Their Meaning to the Petroleum Industry ..... *W. T. Ziegenhain* 22
Sparks From the News 24
Ellsworth County Field One of Kansas' Busiest Areas ..... *Dal Dalrymple* 25
Oil Picture Cloudy in War's Second Year ..... *J. P. O'Donnell* 27
3,400,000-Bbl. Average Daily Runs Will Supply Needs 28
News From the State Capitals 30
Editorial: Fine, But —— 31
Tide Water Associated Completes Alkylation Plant in California ..... *C. K. Viland and James Seth* 32
Defense Heads Seek Supply of Toluene for War Needs ..... *Henry D. Ralph* 33
Improvement in Pennsylvania After Fourth Price Cut ..... *A. C. MacIntyre* 34
International News 37
German Oil Position Bolstered by European Political Changes 38
Deaths 38
Decreased Exports Emphasize Growing Need for Expanding Domestic Oil Markets ..... *Paul Truesdell* 41
Refinery Expansion 43
Natural Gasoline News 43
Natural Gas News 43
Programs and Meetings 44
Pipe-Line Activity 68

Engineering—Operating

Mast-Type Derrick Used on Deep Coastal Test ..... *Neil Williams* 46
Ordinary 110-Volt Circuit Indicates When Tank Is Full ..... *W. T. Ziegenhain* 48
Safety: Guard Around Pumping Unit on Filling-Station Plot 48
Operating Ideas 49
Rack for Casing and Pipe Made From Junk Tubular Material ..... *Harry F. Simons* 50
Gulf Plants Produce High Gasoline Yield by Polyform Process ..... *Povl Ostergaard and Dr. Eugene R. Smoley* 52
Small Generating Plant Supplies Pumping Power in Illinois Pool ..... *Harry F. Simons* 65
Suggested Field Practices, No. 12 ..... *T. P. Sanders* 66
Questions on Technology ..... *W. L. Nelson* 67

Field Operations

Field Operations Summarized 71
California ..... *L. P. Stockman* 72
Rocky Mountain Area *T. E. Ingram* 76
Southwest Texas ..... *F. L. Singleton* 77
Michigan ..... *Otto C. Pressprich* 79
Permian Basin, Panhandle ..... *R. Marne Sanford* 80
North Central Texas *R. Marne Sanford* 81
N. Louisiana, Arkansas *George Weber* 84
Kansas ..... *Dal Dalrymple* 85
Forest City Basin 85
Indiana, Ohio, Kentucky 88
Oklahoma ..... *Dal Dalrymple* 89
Among Drilling Contractors 90
Eastern Texas ..... *R. Marne Sanford* 92
Texas Gulf Coast ..... *Neil Williams* 93
Louisiana Gulf Coast ... *Neil Williams* 94
Appalachian Fields 96
Illinois 97
Canada 99
Mississippi ..... *George Weber* 100
Wildcats ..... Included in Field Operations

Markets and Prices

Group 3 Market ..... *D. H. Stormont* 104
New York Market ... *J. P. O'Donnell* 105
A.P.I. Refinery Report 105
Tank-Wagon Market 106
Refinery Prices 107
Crude-Oil Prices 111

Additional Features

Record of Oil Securities 101
Personal Paragraphs 102
Equipment News 108
Classified Advertising 110-111
Advertisers' Index 112

SUBSCRIPTIONS: United States, 1 year, $6.00; 6 months, $3.00. Elsewhere, 1 year, $7.00; 6 months, $3.50. SINGLE COPIES: 20 cents each. Back copies, when over a year old, 50 cents. CHANGES OF ADDRESS reaching the Tulsa office of the Journal by Saturday take effect with the following issue.

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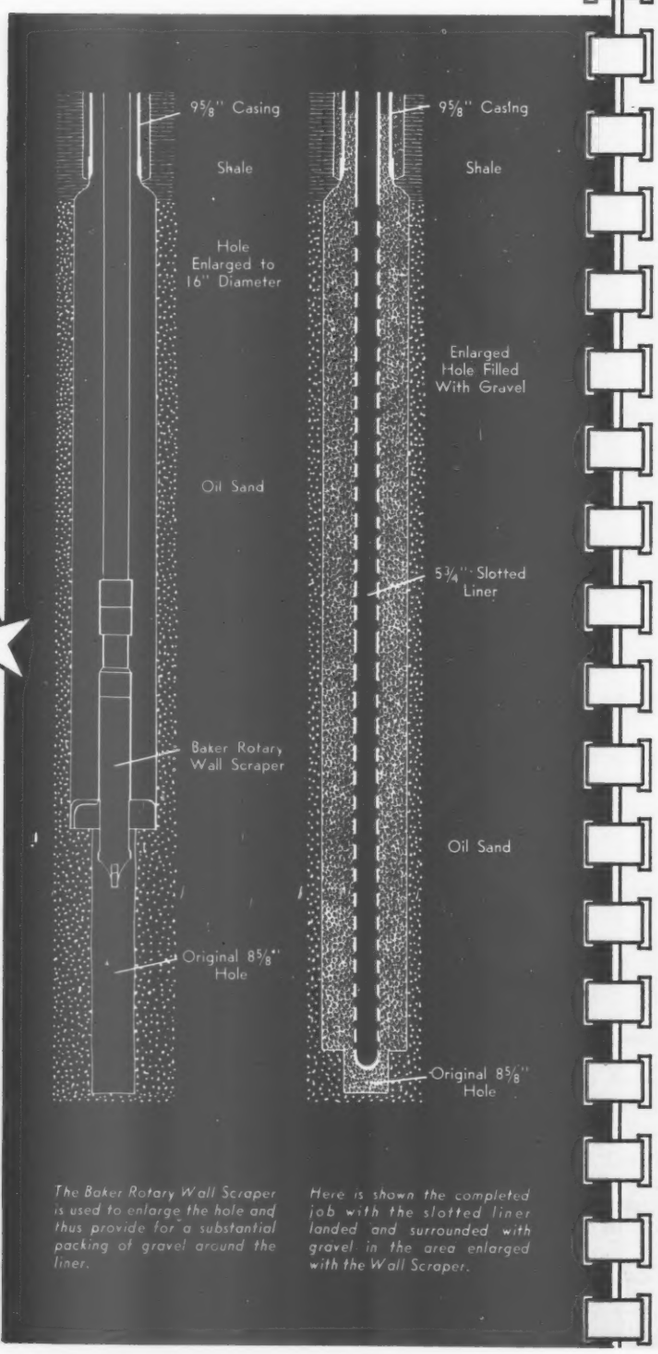
ENLARGING THE HOLE FOR GRAVEL PACKING

One of 12 Practical Field Applications for the BAKER ROTARY WALL SCRAPER



The Baker Rotary Wall Scraper is used to enlarge the hole and thus provide for a substantial packing of gravel around the liner.

Here is shown the completed job with the slotted liner landed and surrounded with gravel in the area enlarged with the Wall Scraper.

Send for Baker Broadcast No. 19

BAKER ROTARY WALL SCRAPER

BAKER OIL TOOLS, INC.
P. O. Box 127, Vernon Station
LOS ANGELES, CALIFORNIA
HOUSTON, TEXAS
NEW YORK, N. Y.

The BAKER ROTARY WALL SCRAPER...

Provides a safe, efficient means of enlarging the walls of an open hole to a diameter considerably greater than the casing or hole through which the tool is run.

REMARKABLE REAMING CAPACITY

One of the outstanding features of the Baker Rotary Wall Scraper is its remarkable reaming capacity in relation to the O. D. of the tool. It has a maximum expansion range on the blades of from 4" to 36".

SAFETY

The safety of this tool has been ably demonstrated in the thousands of successful runs made in oil fields throughout the world under most adverse operating conditions.

TWO TOOLS IN ONE

WALL SCRAPER — 2 TOOLS IN — WALL SAMPLER

The Baker Rotary Wall Scraper is really "two tools in one" since by merely substituting Sampler Blades for the regular Scraper Blades the tool is converted into a Baker Rotary Wall Sampler . . . an exclusive Baker feature. With this device it is possible to take actual cores from the side walls of any uncased hole at any depth.

Important Applications

Enlarging Holes for Casing

Cleaning Up Oil Sands

Setting Liners

Setting Cement Plugs

Bottlenecking for Cement Jobs

Removing Sections of Drillable Pipe

Water Shut-Off Tests

Sidetracking

Straightening Holes

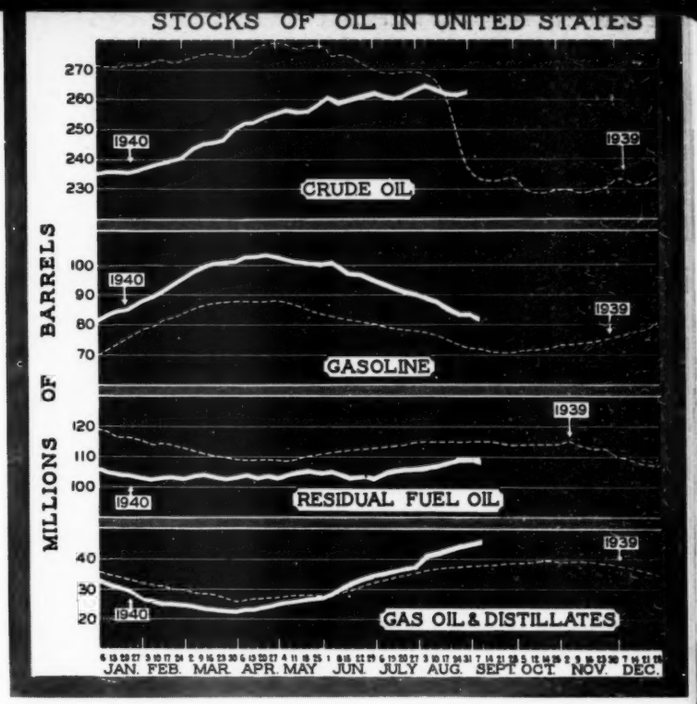
Fishing Jobs

Enlarging Holes for Gravel Packing

Side Wall Sampling (by converting Scraper into Baker Wall Sampler)

Trends

Production Jumps as Southwestern States Increase Allowables



SOUTHWESTERN oil states last week definitely decided to ignore the recommendation of the Interstate Oil Compact Commission that crude-oil production in September be kept 5 per cent under the Bureau of Mines estimated demand. Kansas established an allowable 19,300 bbl. daily greater than the recommendation, Oklahoma decided to continue its August schedule through September and Texas announced an allowable substantially greater than in August. In no state was the 5 per cent recommendation accepted.

CRUDE PRODUCTION *3,617,414 bbl. daily average—up 126,979 bbl. One year ago 3,313,482 bbl.*

CRUDE STOCKS *265,865,000 bbl. as of August 31—up 2,063,000 bbl. One year ago 236,643,000 bbl.*

GASOLINE STOCKS *84,294,000 bbl. as of September 7—down 1,099,000 bbl. One year ago 72,066,000 bbl.*

RESIDUAL FUEL-OIL STOCKS *108,080,000 bbl. as of September 7—down 694,000 bbl. One year ago 115,321,000 bbl.*

GAS OIL AND DISTILLATES *45,505,000 bbl. as of September 7—up 739,000 bbl. One year ago 37,728,000 bbl.*

REFINERY RUNS *3,500,000 bbl. daily week ended September 7—down 75,000 bbl. One year ago 3,380,000 bbl.*

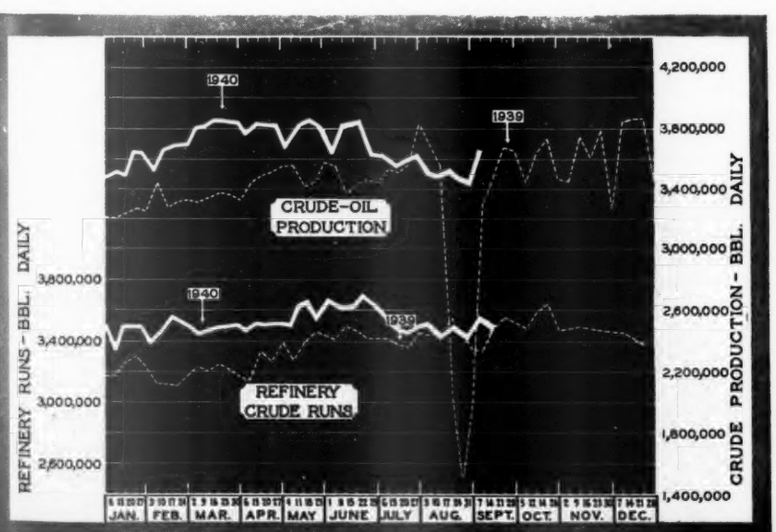
For the six states—Texas, Oklahoma, Kansas, Louisiana, New Mexico and Arkansas—the September allowables are 123,617 bbl. daily greater than in August although slightly under the Bureau of Mines estimated demand for this month. The state bodies base their refusal to accept the compact's recommendations on the fact that the large and small crude purchasers nominated additional quantities and so far as their records show there is a current demand for the crude. In Oklahoma and Kansas the state commissions also emphasize the fact that while Illinois was given a demand for 430,000 bbl. daily, its average production will be around 375,000 bbl. daily, or 52,317 bbl. daily under the estimate. It is claimed that Oklahoma and Kansas are justified in enlarging their output to take care of this market which Illinois can no longer supply.

Substantial quantities of Illinois crude have been going to Canada and Atlantic seaboard points. Because of the drastic drop in tanker rates in recent weeks a large part of this outlet either has or will return to the Louisiana and Texas Gulf Coast. Shipments from the Gulf to points along the Mississippi and Ohio rivers have also increased. These developments are pointed to as indicating that the Mid-Continent operators can easily overemphasize the market importance of the decline in Illinois production.

DAILY AVERAGE PRODUCTION FOR WEEK

	Sept. 7, 1940	Bur. Mines Sept. est of demand	September state allowables	Aug. 31, 1940
Arkansas	73,255	69,700	75,105	74,220
California	623,500	593,000	571,000	594,500
Eastern states	103,200	101,200	.....	103,200
Illinois	377,683	430,000	.....	371,500
Kansas	165,750	170,700	190,000	176,900
Louisiana	278,080	274,700	274,854	272,740
North Louisiana	*64,830*	.....	.....	*65,305*
Louisiana Gulf Coast	*213,250*	.....	.....	*207,435*
Michigan	52,253	55,700	52,000	53,369
Mississippi	28,220	9,700	.....	21,350
New Mexico	102,490	105,300	100,300	102,440
Oklahoma	417,475	397,000	390,000	415,000
Rocky Mountain states	96,320	97,000	.....	100,180
Texas	1,299,188	1,320,000	1,298,528	1,205,036
East Texas	*374,897*	.....	.....	*374,898*
West Texas	*221,500*	.....	.....	*195,897*
North Central Texas	*125,850*	.....	.....	*124,196*
East Central Texas	*78,648*	.....	.....	*72,095*
Texas Panhandle	*76,496*	.....	.....	*65,090*
Gulf Coast Texas	*316,550*	.....	.....	*285,950*
Southwest Texas	*105,247*	.....	.....	*87,000*
United States	3,617,414	3,624,000	.....	3,490,435

The continued weakness in gasoline markets is the principal situation stressed by those who feel that the increased production in prospect this month is ill-advised. Gasoline prices in several southeastern states were reduced last week and are now lower at several points—minus taxes—than they were during the depression period of the early thirties. So far there has been no indication that refiners will use the fall months to correct an excess inventory position in gasolines which has overhung motor fuels throughout the year. At this time gasoline stocks are greater than they were a year ago by 12 million barrels. It is this unsatisfactory market that makes it difficult to explain why many large and small buyers are endeavoring to increase their crude purchases instead of reducing their nominations in line with the seasonal decline in demand and the excess storage situation.


REFINERY RUNS - BBL. DAILY
CRUDE PRODUCTION - BBL. DAILY
CRUDE-OIL PRODUCTION
REFINERY CRUDE RUNS
1940
1939
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

Thirty-seven gasoline pumps greet the motorist at the half-way station

Refiners and marketers will watch with unusual interest the experience of Esso Marketers, who hold the exclusive right to operate filling stations along Pennsylvania's new 160-mile superhighway. Being a toll road, its financial success may signal the building of a broad network of similar highways.

Superhighways--Their Meaning To the Petroleum Industry

By W. T. ZIEGENHAIN

A 160-MILE superhighway, free of traffic lights, side roads, grade crossings, and sharp curves, will be opened between Pittsburgh and Harrisburg, Pa., about October 12. It is of interest to the oil industry because it serves as the experimental grounds for similar roads tentatively planned to cross the continent in both directions. The road is of special interest to marketers because it is a toll road and the rights to erect and operate service stations along its route are held exclusively by the Standard Oil Co. of Pennsylvania, an affiliate of Esso Marketers and a subsidiary of the Standard Oil Co. of New Jersey. The highway is unofficially known as the "Dream Highway" but officially it is called the Pennsylvania Turnpike. Tentative plans have been made to extend this road eastward to Philadelphia and westward to Chicago or St. Louis.

The territory through which this road was built included every obstacle of highway construction with which engineers are confronted, but the work progressed at unusual speed.

This road has been built from funds made available by two federal agencies, but it is to operate as a self-liquidating project. The financial success of this road will undoubtedly influence the rapid expansion of such systems. Time alone will determine the extent, but it is not necessary to wait in order to see what the public wants in modern roads. One needs only to inspect this road.

Speed has been recognized as an essential for modern travel, and with this in mind no speed limit will be recognized when the road is placed in operation. Some authorities refer to it as "the 120-m.p.h. road." In any event, unusually high speeds will be attainable for ordinary passenger cars and trucks, and practical tests have proved that gasoline and oil consumption mount very rapidly as the speed of the vehicle is increased. Because of this fact, refiners and marketers are wondering how much more gasoline and oil a driver will be willing to consume in order to save time and miles without sacrificing safety. The matter of gasoline consumption is closely related to speed and as the speed mounts the gasoline consumption increases much faster.

For example, a typical modern pleasure car traveling at the rate of 75 m.p.h. will use twice as much gasoline per mile as one traveling 25 m.p.h. The same car traveling 85 m.p.h. will consume twice as much gasoline as one traveling 45 m.p.h. Thus, even though the road will shorten the distance between Pittsburgh and Harrisburg, it certainly does not mean that a proportionate savings in oil and gasoline will be effected. The savings will depend upon the driver.

This fact emphasizes the uniqueness of this highway in that to date cars have been designed for our ordinary highways and streets. These cars are relatively inefficient at high speeds.

Now, this highway was designed to fit man's most accurate conception of the modern and future car. If the experiment proves successful we may expect a very rapid change in car design whereby manufacturers will take advantage of the speeds permitted by such roads. The efficiencies of the resulting engines will be greatly improved at high speeds. Along with this change the refining industry may be expected to produce gasolines of octane values which approach aviation gasoline. The time may soon be reached when 100-octane gasoline will be as common on the highways as at airports. If and when this occurs, ordinary refining methods for manufacturing motor fuel must be discarded. Then, the entire oil industry will witness a marked change, during which it will become apparent that crude oil serves simply as a convenient, abundant, and relatively cheap source of hydrogen and carbon for the synthesis of superhydrocarbons of one kind or another. Even fuel oils may eventually be synthesized. The refining industry will then approach the status of the chemical industry.

A substantial advance along this road is already apparent as a result of refiners being called upon to produce 100-octane aviation fuels. And, hand in hand with this development, we see the synthesis of toluene and benzol in competition with coal. We now see the broad commercialization of synthetic rubber made from petroleum. Also, chemists are prepared to commercialize the manufacture of glycerine at any time the need might arise. There is no apparent end to the possibility of ordinary petroleum serving as a basis for the manufacture of more than 3,000 commercial articles of trade.

In the meantime, however, it may be of interest to review certain data pertaining to the erection of the new highway itself.

Financing Highway

The new road will cost close to $70,000,000. The Public Works Administration has agreed to provide money up to 45 per cent of the cost of the work and the Reconstruction Finance Corp. has agreed to purchase bonds covering the estimated balance. Each agency has fixed maximums, the P.W.A. committment being limited to $29,250,000 and the R.F.C. to $40,800,000. The financing and construction are being administered by the Pennsylvania Turnpike Commission, of which Walter A. Jones is chairman. The commission itself is composed of five men, and was created on May 21, 1937, by an act of the state legislature. The project has been praised from many sides. It has been heralded as a sound business venture, as an effective unemployment-relief medium, and as a modern defense measure for the rapid movement of war equipment. The cost of the road will be paid for out of the tolls which will be collected. The amount from each vehicle will depend upon its weight and the distance traveled on this road. The one-way toll for a passenger car going over the entire road has been tentatively established at $1.50. The highest toll will be paid by trucks with trailers, which toll has been tentatively established at $10 for one passage. For vehicles traveling less than the full length of the turnpike the toll will vary from 1 cent per mile for passenger cars to 4 cents per mile for trucks. Traffic authorities estimate 1,300,000 vehicles of all types will use the highway in its first year of operation. They expect the number to increase to 2,070,000 in 1945 and the revenue to advance from $2,670,000 the first year to more than $4,000,000 each year, starting in 1945. Gasoline consumption the first year is expected to exceed 26,000,000 gal., of which 12,000,000 are expected to be purchased at the 10 new stations along the turnpike.

History of Road

As early as 1755 the route of the present highway was recognized as an advantageous means

for traversing the Appalachian Mountains. In that year Col. James Burd, a Pennsylvania frontiersman, was instructed to cut a wagon road along this route to aid General Braddock in the latter's campaign against the French and Indians on the Ohio River. However, Braddock's defeat came early and the construction of the road was left far from completed. In 1837 the route was surveyed for the construction of a railroad, but in 1844 the project was dropped. Then in 1854 the state charted the Marysville, Landisville & Broadtop Railroad, which asked to build lines over this route. Work was started, but within a relatively short time obstacles confronted the road and construction work was stopped. Then, after several name changes, the company resumed work as the South Pennsylvania Railroad. Work continued intermittently for the following 20 years, and in 1883 the route came into prominence when the Pennsylvania Railroad decided to enter into competition with the New York Central by building a parallel line up the west shore of the Hudson River. In retaliation, William H. Vanderbilt, head of the New York Central, organized a new company to build on the route of the South Pennsylvania. Other famous names came into the financial struggle at that time, one of the principal supporters being Andrew Carnegie. Construction work on this line continued for 2 years, and in all about 54 miles of track was laid. Then in the fall of 1885 the order went out to stop work. This came as a result of the sale of the new line to the Pennsylvania Railroad, which, with the Baltimore & Ohio, owned the right-of-way until its purchase by the Pennsylvania Turnpike Commission.

While some advantage was gained by reason of the earlier railroad construction it was necessary greatly to increase the openings or tunnels through the mountains for the highway. Considerable filling in was done so that the maximum grade is but 3 per cent in contrast with a 9½ per cent grade on the older roads which connect Pittsburg and Harrisburg. As a result of filling in many wide valleys the elevation of the road has been held almost constant. The maximum accumulated climb over the new road is 3,940 ft., compared with 13,000 ft. over one of the present popular routes between these same cities.

As may be seen in the accompanying illustration, the highway accommodates four lanes of traffic separated by a 10-ft. strip of land. This arrangement eliminates 75 per cent of normal accidents.

Other safety features include 6.71 miles of lighted and well-ventilated tunnels, sweeping curves with a minimum radius of 955 ft., and side runs for accelerating or decelerating the car. It is also interesting to note that 160 grade-separation structures and 139 draining structures had to be built. The total time provided for construction was limited to 20 months, and during that period as many as 18,000 men were employed. More ground was moved than was necessary to build the much-publicized Maginot Line. The road consumed 48,000 tons of steel, 2,750,000 bbl. of cement, 950 tons of sand, and 1,775,000 tons of stone. The concrete roadway itself is 9 in. thick.

Service Stations

Brief mention has been made of the service stations along this highway. There are 10 stations over the 160 miles of travel. These have been placed at approximately 15-mile intervals and on opposite sides of the highway. A motorist will pass a station on his side of the road approximately every 30 miles. In case of an emergency a motorist may receive attention at the station in the other lane of travel, but this would apply only in rare cases. Of these 10 stations, nine will be one-story structures, and the other will be two stories in height. All will be constructed of Pennsylvania field stone and will follow Dutch Colonial architecture. The two-story station will be at a midpoint on the highway and will be known as the Bedford station. It will be located on the south side of the highway. However, it will be convenient for pedestrians to reach the station from the opposite side by means of a subway. This station includes a dining room with space for 120 persons. A lobby is provided with lounges, spacious rest rooms and a veranda which overlooks two unusually beautiful mountain slopes. Asphalt-paved roadways lead around the station to permit cars and trucks to be lubricated or serviced at specified points. Pumps have been provided to accommodate 37 cars at one time.

Truck drivers are provided with sleeping accommodations and adjoining these rooms are special showers, a smoking lounge, and separate rest rooms. High-speed gasoline pumps in the truck lot will be capable of delivering 25 gal. of gasoline per minute. A separate system has been provided to supply fuel for diesel-powered trucks.

A detail which shows the care with which all stations have been equipped is shown in the notice that germ-killing electric lights are installed to flood the toilet seats.

Another detail of interest is that gasoline will be delivered to these stations by tank trucks that are especially equipped with safety devices, including heavy-duty reflectors, backing-up alarms, muffler and exhaust shields, and extra large windows in the cabs to increase visibility. Each truck will be equipped with side lights as well as front, rear, and directional lights. Each will be supplied with special fire-control equipment.

Separating the opposite lanes of traffic will cut accidents 75 per cent. This design provides two high-speed lanes of traffic in each direction separated by a 10-ft. strip of land

A 12-mile straightaway. Note the overhead road crossings. Speeds up to 120 miles per hour may be maintained with safety along this section of road

SPARKS . . . FROM THE NEWS

IT'S A LONG ROAD: After bemoaning the lack of discoveries for 7 months, Michigan operators brought in four oil pools and a gas field during the eighth month.

INEVITABLE: The popular demand for greater speed, higher efficiencies and lower overall costs together with the expansion of superhighways and high-speed military equipment can mean but one thing, the greater use of high-octane gasoline.

IN THE RED: A checkup on the European war at the end of the first year shows it very much in the red so far as the oil industry is concerned. Important markets have been lost with no offsetting gains.

FILL IT UP: They will have to use a couple of tank cars when they fill up the giant bomber plane now being built on the West Coast. The plane's tanks will hold 11,000 gal. of gasoline, sufficient to enable it to fly to Europe and return without stopping. This is more gasoline than two average filling stations sell in a month.

SHIFT: A large number of cars with Illinois license tags are now seen in the Cumberland, Oklahoma, field and some of the new areas of Kansas. This reverses the situation in the early Illinois development when Oklahoma and Kansas cars lined the streets of the new Illinois oil towns.

THE PAYOFF: Major company moves executive and operating headquarters at cost of approximately $500,000. It never pays to stand still, especially for transfer and storage companies.

IT'S DIFFERENT NOW: A year ago the Doubting Thomases could see no oil future for Nebraska. Today, Hunton lime is producing at Falls City, an outpost is showing oil in Viola lime and operators talk of drilling twin wells to both zones.

RESULTS: The current wildcat campaign in Illinois is beginning to produce results. Last week, two pool openers were completed and encouraging showings were reported at other outpost tests.

HERESY: Economists are most unbusinesslike, according to some operators. These point to the one who maintains that buyers should not be permitted to increase their crude purchases until they show the state proration bodies that they can dispose of the increased refinery products at profitable prices.

SWITCHING SOURCES: One of the most important economic developments of the war is the expansion in the manufacture of rubber substitutes from petroleum. Taking the basic material out of the ground in the United States, instead of from trees in the Far East, is going to effect a marked change in our entire trade structure.

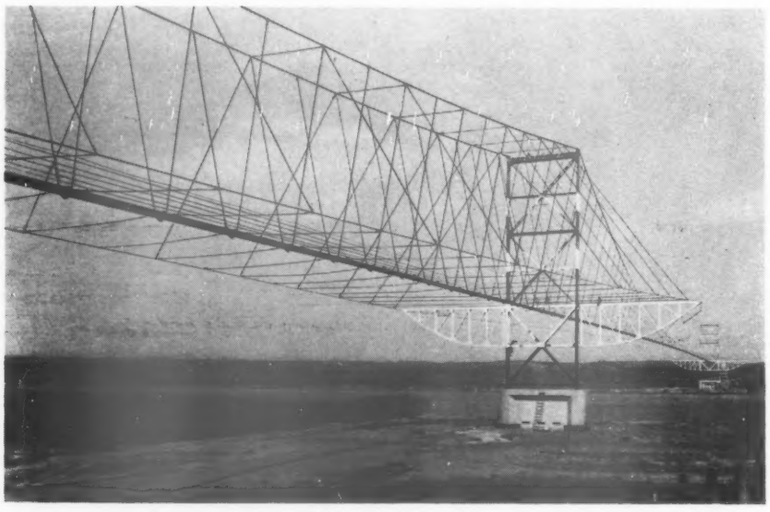
MANANA: Last summer many refiners said they would correct the excess gasoline inventory situation just as soon as fall started. It now looks like they will wait until this winter. In the meanwhile the market doesn't wait and gets weaker.

LEGAL SNARLS: Legal obstacles are proving more formidable this year to those anxious to expand pipe-line facilities than are the difficulties presented by the roughest terrain.

MORE ADO: Operations in the Cement, Okla., field had settled down to routine, but last week a new productive horizon was found on the east side. Renewal of townsite drilling now impends.

ON THE UPLIFT: Only one corner of Ellsworth County, Kansas, is on the Central Kansas uplift, but in that corner rich oil reserves are being developed in the Stoltenberg, Wilkins, Bloomer, Edwards and Lorraine pools.

WORLD'S LONGEST BRIDGE OF ITS TYPE . . .



World's longest single-span pipe-line suspension bridge built by Northern Natural Gas Co. where their 16-in. gas line crosses the Missouri River near Sioux City, Iowa. Article describing construction of this bridge will appear in the Pipe Line Issue of The Oil and Gas Journal, September 19. (Picture courtesy of American Hoist & Derrick Co.)

Ellsworth County Field One Of Kansas' Busiest Areas

By DAL DALRYMPLE

THE Ellsworth County field, now nearing the end of its tenth year of oil productivity, is one of the busier Kansas areas. Between 25 and 30 rigs have been active in the county since the summer drilling campaign started, and indications are that work will continue on a similar or enlarged scale through the fall and winter months. The bulk of activity is confined to the Stoltenberg district, an elongated area extending from southeast to northwest and including several closely related pools that probably will be joined into one large field as development progresses. Completion of wells with maximum potentials has become almost a weekly occurrence. Numerous pool extensions and discoveries have been recorded in recent months.

First oil in commercial quantities was found in the county on October 15, 1930, when Ainsworth Brothers and associates completed No. 1 Heiken, NW cor. Section 25-17-10w, opening the Heiken pool. The discovery caused little excitement and in the following year only two producers were completed while six dry holes were drilled. The producers were the discovery wells in the Stratman and Stoltenberg pools. A considerable drilling program followed in 1932, when some 25 tests were completed and the Breford pool was opened.

Kansas operators still did not get excited about the possibilities of Ellsworth County, but in 1934, when the Lorraine and Wilkins pools were discovered, they began to sit up and take notice. The Lorraine strike was responsible for the county's most intensive drilling spree up to that time, resulting in completion of 96 tests in 1935.

That remained the record through 1939, but by the end of August 1940, a new record of completions had been established and activity gave no signs of abating. There were 101 completions in the first 8 months of this year, including 17 oil wells and 3 dry holes completed in August. If that rate is maintained through the remainder of the year, the 1940 total will almost double the 1935 figure.

COMPLETION BY YEARS

Year—	Oil	Dry	Gas
1930	1	2	0
1931	2	6	0
1932	15	9	1
1933	15	7	0
1934	11	5	2
1935	77	15	4
1936	34	14	0
1937	43	12	0
1938	37	11	0
1939	31	7	0
1940, first 8 months	80	21	0
Total	346	109	7

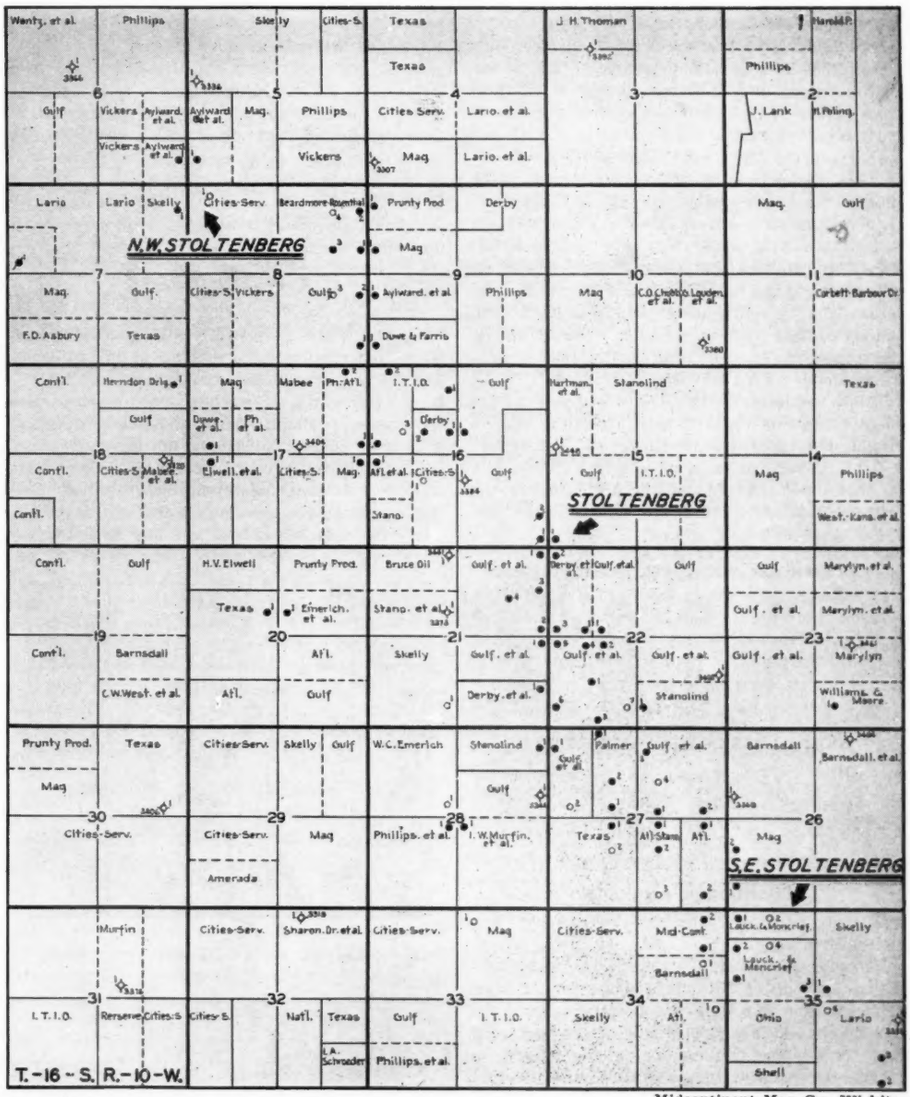
Activity at Stoltenberg

The development of the Stoltenberg district has been outstanding in Kansas this year.

The original Stoltenberg pool was discovered in June 1931, when Tom Palmer and Gypsy Oil Co. completed No. 1 Stoltenberg, C SW SW Section 22-16-10w, in Arbuckle lime at 3,333-47 ft. It had initial swabbing production of 2,400 bbl. of 43-gravity oil in 24 hours. The discovery wildcat was drilled on a north-south anticline found by surface indications. Development was slow for several years and by the end of 1939 only 19 wells in the pool were producing.

Activity began to increase near the end of last year when lease expiration dates neared. Landowners, who had become oil wise, hiked their prices to such an extent that many operators decided it was cheaper to drill on their leases than to renew them for long periods. As a result, Stoltenberg became a busy Kansas area and by the end of July there were 46 producers in the pool. In addition to several extensions of the original area, the Northwest Stoltenberg pool was opened by Aylward and associates in Section 6-16-10w, and three producers had been completed by the end of July; and the Southeast Stoltenberg (or Ehler) pool was opened by Lauck & Moncrief in Section 35-16-10w, with seven wells producing in July. Stoltenberg and Southeast Stoltenberg already have been connected by intermediate producers, and it is but a matter of drilling a few more locations until Northwest Stoltenberg is definitely connected with the major area.

The Stoltenberg pool is on the northeast margin of the Central Kansas uplift. Production is along a southeast-northwest trend, parallel to known granite ridges on the uplift. No granite highs in the field have been found, however, as the Ar-



Midcontinent Map Co., Wichita

The Stoltenberg district, including Northwest Stoltenberg, Stoltenberg and Southeast Stoltenberg (or Ehler) pools, is one of the busier fields in Kansas. The area is spotted and dry holes in the midst of production are not uncommon, as shown by the map. The entire area is considered one continuous field, and probably will be linked with the Stratman and Wilkins pools to the southeast

buckle zone has not been fully penetrated. The producing horizon probably is an old truncated surface, with differing beds of Arbuckle underlying the Simpson zone. Tops of the Arbuckle vary considerably in various wells scattered over the field, although the producing horizon usually is found at an approximate depth of 3,330 ft. The attitude of the beds is not horizontal.

Development is following the southeast-northwest trend, the productive limits of which are yet uncertain. Some dry holes have been drilled along the edges of the proven area, but in several instances operators have gone right on beyond the failures and completed producing wells. Many inside locations remain to be drilled, assuring a continuation of activity even though the field should receive no more extensions.

Other Active Areas

The North Stratman, Stratman and Wilkins pools, to the southeast of Stoltenberg in Townships 17-10w and 17-9w, also have contributed to the increase in Ellsworth activity this year. At midyear there were 22 producing wells at Stratman, an increase of six since January 1; and in the Wilkins pool there were 31 producers as compared with 18 when the year began. It seems probable that with future drilling these pools may be connected with the Greater Stoltenberg field.

The Edwards pool, which is partly in Rice County, and the Bloomer field, partly in Barton and Rice counties, also have contributed to the 1940 development of Ellsworth reserves. Ten producers have been completed at Edwards this year, the majority on the Ellsworth County side. The Bloomer field, which was opened several years ago in Barton County, eventually was extended into southwestern Ellsworth and northwestern Rice and now includes the Habiger-Stumps area that straddles the Ellsworth-Rice line. The only conglomerate production in the field is in the Ellsworth County sector. Sixty-one Arbuckle producers have been completed this year at Bloomer, divided among the three counties. The limits of the field in Ellsworth County have not been determined.

Total production of the five pools wholly within Ellsworth County was nearly 13,000,000 bbl. on July 1. The three pools partly in the county had a total cumulative yield of nearly 8,700,000 bbl. on that date, the Ellsworth share bringing the total for the county to above 15,000,000 bbl. Statistics by pools are as follows:

POOLS WHOLLY WITHIN ELLSWORTH COUNTY

Pool—	No. wells	Potential	Cumulative production to July 1, 1940
Heiken	5	60	339,698
Lorraine	84	12,638	7,573,971
Stoltenberg	56	83,271	2,368,594
Stratman	22	18,381	2,028,496
Wilkins	31	60,569	510,314
Total	198	174,919	12,821,073

POOLS PARTLY IN ELLSWORTH COUNTY

Pool—	No. wells	Potential	Cumulative production to July 1, 1940
Bloomer-Stumps	196	336,013	5,848,351
Breford	17	5,616	983,781
Edwards	63	61,492	1,857,196
Total	276	403,121	8,689,328

Information on Pools

Data on the several Ellsworth pools, other than Stoltenberg:

Heiken.—Opened in 1930, the discovery well having initial yield of 200 bbl. of 43-gravity oil from Arbuckle lime at 3,211-43 ft. Location was on an anticline found by surface indications and core drill. This is the smallest pool in the county, located between the Wilkins and Bloomer areas, and considered defined.

Stratman.—Discovered March 27, 1931, at J. A. Aylward and others' No. 1 Stratman, SE NW SE Section 1-17-10w. It had Arbuckle pay at 3,255-71 ft., and initial yield was 2,200 bbl. of 43-gravity oil daily. It was extended and developed in 1932, and development lagged until recent months. Location was on an anticline found by subsurface geology.

Breford.—Slick, Pryor & Lockhart opened the Breford pool September 10, 1932, at No. 1 Breford, SW SW NW Section 7-17-10w. It had Lansing lime at 3,140-52 ft., and Arbuckle pay at 3,369-3,407 ft., and had initial production of 950 bbl. of 45-gravity oil. Both formations were productive. The pool was found by core drill. The South Breford pool was opened in June 1936 and combined with Breford in 1938. It was on anticline found by core drill. First Lansing lime producer was completed in 1937, and subsequently several of the Arbuckle producers were plugged back to the shallower pay. The pool, which was extended into Barton County, is considered defined.

Wilkins.—This pool was opened April 23, 1934, at Smith & Ash's No. 1 Wilkins, SE cor. Section 13-17-10w. Initial yield of 282 bbl. of 41-gravity oil was found in Arbuckle pay at 3,260-80 ft. Location was on a dome found by core drill. The Schroeder pool, opened in February 1938 at Cities Service's No. 1 Schroeder, CNL NW Section 29-17-9w, with initial yield of 2,644 bbl. from Arbuckle lime at 3,215 ft., was combined with Wilkins in 1939.

Lorraine.—This first Ellsworth County area to gain recognition as an important pool was found November 19, 1934, at Twin Drilling Co.'s No. 1 Rolfs, SW NW SW Section 13-17-9w. It had initial natural production of 526 bbl. of 46-gravity oil from Arbuckle at 3,200-05 ft., increased to 1,640 bbl. after acid. Wabaunsee gas and Lansing oil production later was found. Location of the discovery was on an anticline found by seismograph. Nearly 100 wells were completed in the pool between 1935 and 1938. The area was considered defined and fully developed, but recently activity has been renewed on a small scale.

A Prolific District

Stumps.—Opened May 8, 1935, at Allison and others' No. 1 Stumps, NW NW SW Section 4-18-10w, Rice County, with initial yield of 48 bbl. naturally and 625 bbl. after acid, from Arbuckle at 3,229-67 ft. Gravity of the oil was 42°. North Stumps pool was opened by Ralph Wixson and others in Section 28-17-10w, Ellsworth County, in February 1938, with a 786-bbl. producer in Arbuckle lime at 3,306 ft. The two areas eventually were joined. The Habiger pool was opened August 26, 1937, at Bridgeport's No. 1 Habiger, NW NW NW Section 5-18-10w, Rice County, and ultimately extended into Ellsworth County. It produced from Lansing lime at 2,924-3,016 ft., with initial potential of 4,027 bbl. of oil and 7,000,000 cu. ft. of gas. This proved to be a rich area, yielding some of the larger wells in the state. The Stumps-Habiger area now is part of the Greater Bloomer field.

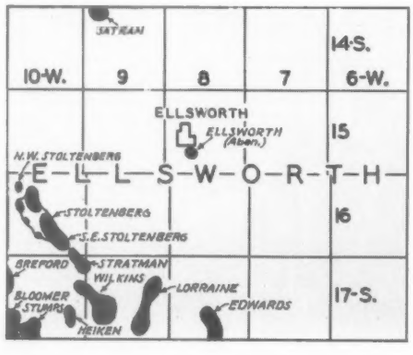
Bloomer.—Opened February 26, 1936, at Yarnell, Carlson & Spencer's No. 1 Bloomer, NE NE NW Section 36-17-11w, Barton County, has been extended into Ellsworth and Rice Counties. The discovery had initial production of 417 bbl. of 43-gravity oil from Arbuckle at 3,257-81 ft. It was drilled on anticline found by following trend. Field production now is from Arbuckle, Lansing, and conglomerate pays. The area has not been defined and considerable drilling remains to be done in the Ellsworth County sector.

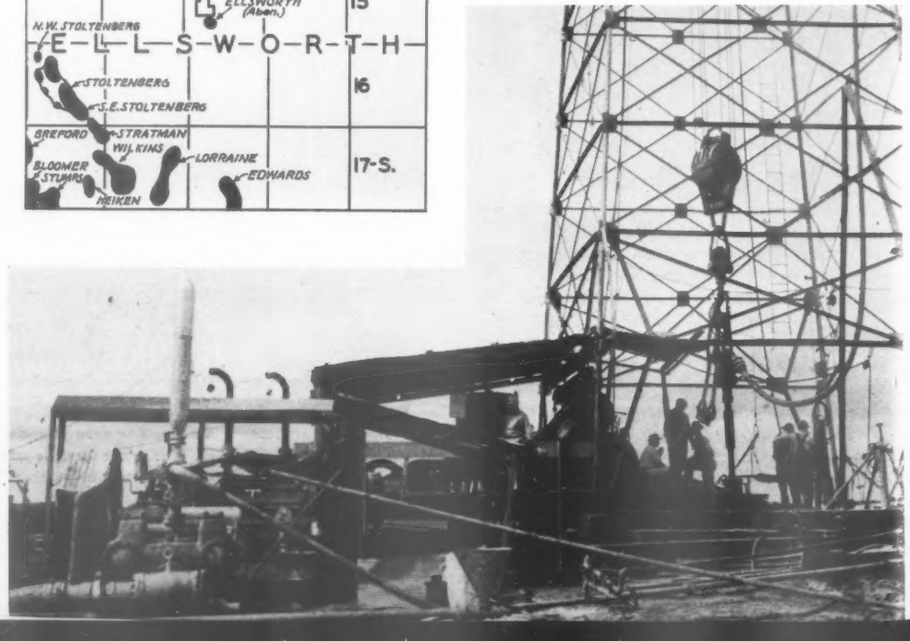
Edwards.—On a dome found by subsurface geology, this pool was opened at Skiles & Davis' No. 1 Edwards, NW NW NE Section 3-18-8w, Rice County, and just south of the Ellsworth line, on March 3, 1936. It had initial yield of 600 bbl. of 41-gravity oil from Arbuckle at 3,278-82 ft. It soon was extended into Ellsworth County and greater part of the development has been in that county.

All of the Ellsworth oil pools are located in the southwestern part of the county, where the Central Kansas uplift crosses from Rice to Barton and Russell counties. The Lorraine pool is on the Ellsworth anticline, which crosses the uplift in a northeast-southwest direction and influences several pools to the southwest in Rice and Stafford counties.

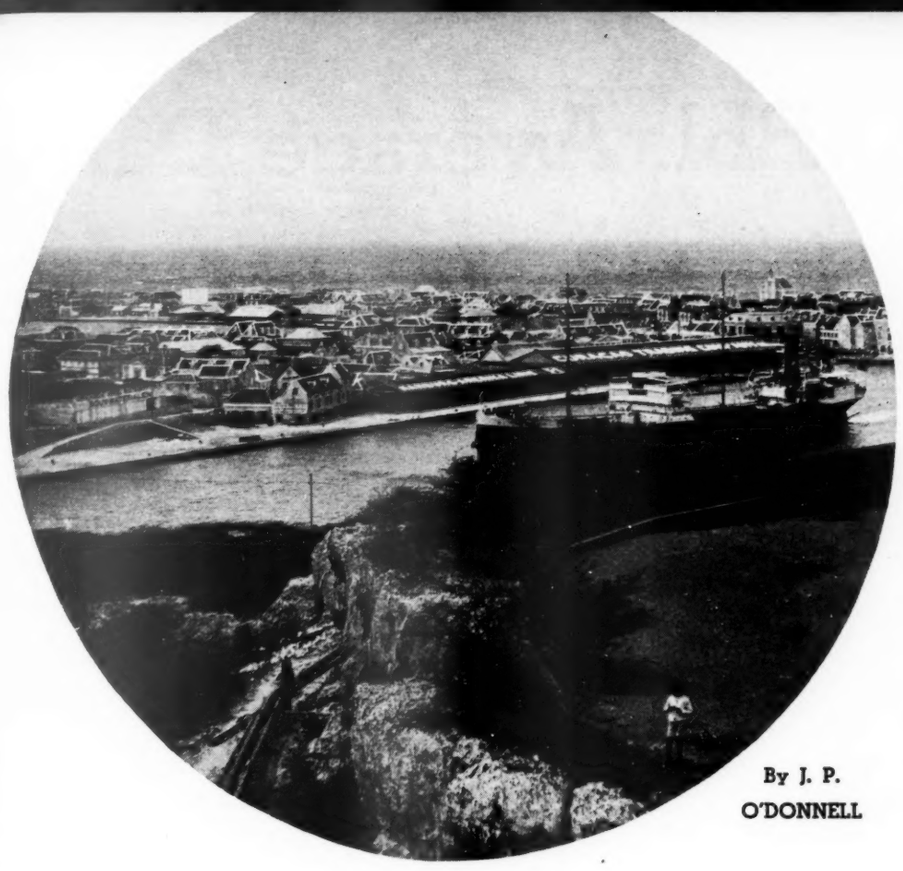
The greater portion of Ellsworth County lies northeast of the uplift and, aside from a few scattered wildcats, has had little drilling. The northeastern three-fourths of the county is in the Salina basin, an extensive geological province in North Central Kansas which has been but superficially explored for oil. Small gas production has been found near the town of Ellsworth, in a pool now abandoned, and in the Satran pool in the northwest part of the county. Satran gas was found in Herrington lime at 1,285-90 ft., and Ellsworth gas in Wabaunsee pay at 2,195-2,200 ft. There has been no recent development in the gas areas.

Although Ellsworth activity of the moment is confined to the Central Kansas uplift area, the Salina basin district offers possibilities for the future—and there are those who believe the basin sector eventually will be proven productive.





Left: Oil production in Ellsworth is confined to the southwest corner, where the Central Kansas uplift crosses the county. Gas has been found to the north in the Satran pool. Below: Well-drilling scene in Ellsworth County



An outstanding oil development of the war's first year was the German invasion of the Netherlands, necessitating removal of Royal Dutch-Shell headquarters from The Hague to the small island (shown in picture) of Netherlands West Indies off the coast of Venezuela. A subsidiary company operates a large refinery on the island

By J. P. O'DONNELL

Oil Picture Cloudy in War's Second Year

NEW YORK, Sept. 10.—Despite the fact that it is now in its second year, the war has yet to give the oil industry a conclusive indication of what the ultimate effects on the industry will be. The future is debatable because the theater of war has broadened and there are contingent developments of possibly vast importance. For this reason the oil industry is looking to the second year of the war for possible clarification of the prospects that are now so obscure. The principal effect of the first 12 months was the disruption of distribution facilities resulting mainly from Great Britain's blockade of Europe.

A sudden end to the war would reopen the European market and, it is believed, there would be a very substantial but probably short-lived increase in demand. Every country in Europe is suffering from a shortage of oil products and they have enforced rigid restrictions on gasoline consumption. This demand is expected to be short-lived for two reasons: It will probably decline when normal reserves are replaced and then it is possible that demand would be less than prewar levels for some time because of the impoverishment of the nations by the war.

If Great Britain is victorious, the world oil picture is unlikely to be changed for oil-producing and refining centers throughout the world are either in Allied or nonbelligerent hands. If Germany is successful in her siege of Great Britain, the reaction of the Allies to such a defeat would be most important. If they continued the war from colonial bases, the situation would not immediately change but if it resulted in their capitulation the question of the disposition of the far-flung colonies of Great Britain and the Netherlands with their vast oil resources would arise and with it the question of the disposition of British and Dutch controlled oil companies operating throughout the world.

The first year of the war witnessed the acquisition by Germany of the majority of French refineries and the small Pechelbronn field in northeastern France. The value of the refineries is regarded as negligible because of the lack of crude oil for processing. Germany's sources of crude oil are now limited to Rumania and Russia. Rumania, which has succumbed to Axis persuasion, has taken over control of several British and French oil companies, thereby posing the question as to what would happen in other countries which might fall under Axis domination. The one American oil company operating in Rumania has not been disturbed.

No Important Recent Changes

With the progress of the war in Europe at least temporarily resolved into Germany's siege and Great Britain's retaliatory blockade, there have been no recent changes of great importance to the oil industry. The possibility of a further altering of Rumania's status remains, however, with Russian troops massed on the borders of Bessarabia and Germany pledged to protect Rumania's contracted frontiers. If Russia seized the Rumanian fields not far from the Bessarabian border and thereby provoked war with Germany, the latter would thereby relinquish her only important sources of crude oil. This would make the Nazis entirely dependent on synthetic products and emphasize another unknown factor in the war, i.e., the volume and quality of the products they can manufacture.

Developments in the Near East may prove of ultimate significance. Italy is harrying Great Britain with sporadic air attacks there and is possibly gathering strength for an attack that would bring the production of near eastern countries under her control. A two-pronged offense, one route through the Balkans via Greece and the other through Egypt, may be in the making. So far Italy's efforts, as they directly affect oil, have been confined to the bombing of the Haifa, Palestine, refinery and of the Suez Canal, Britain's important trade route. Loss of French mandated Syria through which the northern branch of the Kirkuk pipe line passes may assume considerable importance to Great Britain for it opens another possible route for an Italian drive in the Near East. Great difficulties in maintaining supply lines and a reported shortage of petroleum may hamper such a drive. An enlarged British fleet, strengthened by the acquisition of American destroyers, is also a strong factor in the maintenance of the status quo in the Near East.

The major effect of the first year of the war in the Western Hemisphere is the curtailment of outlets. The domestic oil industry is painfully aware of the effect on exports which no division of the industry has escaped. Exports of both crude oil and refined products have been reduced 25 per cent. While the loss has been offset by gains in domestic consumption, failure of the war demand to materialize has resulted in the oversupply of domestic markets. The effect of this failure is shown in the currently low gasoline prices but more dramatically by lube-oil prices which skyrocketed at the beginning of the war only to fall below prewar levels as stocks piled up. The effect on this and other oil-producing and refining countries outside the war zone has been in proportion to their dependence on Europe for a market. Most seriously affected were South American countries which shipped a large part of both crude and refined oil to Europe.

The contingent effects of the war are widespread. Mexico's dependence on Germany and Italy for a foreign market has forced her to look elsewhere for an outlet. She has reportedly done this at substantial price concessions and this has been one of the planks in the Almazanistas' anti-Camacho platform. With revolution threatening, Almazan has charged the Cardenas-Camacho group with the "delivery of 18,000,000 bbl. of crude oil in New York at 40 cents a barrel, shipping charges and taxes prepaid. As crude oil is now selling around 90 cents a barrel, the people of Mexico will be deprived of something like $9,000,000 while oil workers starve!" Thus the loss of markets due to war in Europe may furnish part of the excuse for revolution in Mexico.

In the Far East the government of the British East Indies has taken every precaution to prevent the islands' oil facilities from falling into hostile hands. Pipe lines, oil refineries, and wells are mined and ready to be destroyed if invasion threatens. Japan, driven out of the American market by export-licensing requirements, is reported to be casting covetous eyes on the Dutch East Indies, but negotiations now under way are expected to result in a peaceful settlement of this problem.

By shutting off the most important market for oil-exporting countries, the war, in its first year, has slowed down the progress of the world oil industry. Physical damage, proportionately, has been small. With so little defined, the outlook for the future is purely speculative.

3,400,000-Bbl. Average Daily Runs Will Supply Needs

THE distillate fuel-oil position is today the center of interest in the industry and will continue to be for the next few months. The rapid increase in the consumption of distillate fuel oil for domestic heating over the last 4 or 5 years has resulted in constantly greater attention being given to this product and particularly to the ways and means of balancing the output of distillate fuel oil with that of gasoline so as to avoid the burdensome accumulation of the one product while supplying the demand for the other.

This growth in consumption of distillate fuel oil has necessitated closer study of the sources of supply and the movement of the product to the ultimate consumer. The two statistics-gathering agencies, namely, the U. S. Bureau of Mines and the American Petroleum Institute, alert to the industry's requirements in this respect, have revised and amplified the statistics which they gather and disseminate to the industry. The accompanying tables give the revised statistics for the supply and demand of gas oil and distillate fuels for the year 1939 and the first 6 months of 1940. These are in accordance with the Bureau of Mines' present method of calculating the demand and will form the groundwork for any calculations of required supplies over the coming winter.

The two most important changes that have been made in the published statistics are (1) the inclusion of terminal stocks of distillate fuel oils east of California in the calculation of demand, and (2) the inclusion of "transfers from crude oil" east of California in the demand.

Early in 1939 the Bureau of Mines and the American Petroleum Institute undertook to gather and publish data relative to the stocks of distillate fuel oils in transit, in pipe lines and at terminals east of California. These stocks, which are generally spoken of collectively as terminal stocks, had been gathered and published for California for several years. The inclusion of terminal-stock changes east of California in the calculation of demand resulted in securing a much better picture of the movement of this oil to the ultimate consumer. When only the changes in refinery stocks were considered, the movement of distillate fuel oil from the refineries to terminals, particularly those along the Atlantic seaboard, were put into "demand" whereas actually it may not have been consumed until several months later. The inclusion of the terminal stocks retains this oil in this stock figure and it does not go into "demand" until it is moved out of the terminals.

Although the reporting agencies gathered these statistics over the year 1939 they did not include the terminal-stock changes east of California in the calculation of demand for the reason that similar figures were not available for the year 1938 and it was desired to show a comparison with the prior year's figures in the published statement. However, beginning with January 1940 the demand figures published by the Bureau of Mines and the A.P.I. have included changes in terminal stocks as well as refinery stocks for all refining districts and the comparative monthly figures for 1939 as shown in the Bureau of Mines' statements have been revised to put them on the same basis as the 1940 figures.

Another change which was made by the Bureau of Mines in January 1940 was the inclusion, in the demand for distillate fuel oils, of certain amounts of crude oil which had been transferred to this classification by the individual companies east of California. No official information has been published by the Bureau of Mines as to the exact nature of these transfers, but it is understood that they represent amounts consumed in pipe lines and on leases and certain amounts of crude oil transferred to diesel oil and included in the bureau's gas-oil and distillate-fuel-oil classification. The determination of these transfers is based on an extensive study which the bureau has made and the figures are, of course, as accurate as can be determined. In any event, as these

In this article crude-oil runs to stills at refineries in the United States are projected for the final quarter of this year and the first quarter of 1941.

The estimates in regard to refinery operations are based on the expected demands for both gasoline and distillates. The present excess gasoline inventories are taken into consideration and a balanced operation is suggested which will assure a healthy gasoline-inventory situation April 1, 1941, and an expected record demand for furnace oils and other light fuels this fall and winter will be adequately supplied.

The tables, which were prepared by one of the industry's leading statisticians, take into consideration the revisions that have been made in the method of reporting data covering distillate fuel-oil production.

Comments regarding the estimates of supply and demand, as outlined in this study covering the 6 months starting October 1, are invited.

FORECAST OF DEMAND AND REQUIRED SUPPLY OF GASOLINE AND DISTILLATE FUEL OIL AND REQUIRED RUNS TO STILLS

October 1940 to March 1941 Inclusive and Comparison With Previous Year

Quantities are in Thousands of Barrels

	Gasoline		Distillate fuel oil	
	Estimated Oct. 1940 to Mar. 1941	Actual Oct. 1939 to Mar. 1940	Estimated Oct. 1940 to Mar. 1941	Actual Oct. 1939 to Mar. 1940
Domestic demand	277,500	263,190	112,000	99,704
Exports	7,500	15,581	11,000	11,971
Total demand	285,000	278,771	123,000	111,675
Miscellaneous supply of natural gasoline and benzol	27,400	28,317	.....	.....
Imports	.....	157	1,500	900
Transfers from crude oil	.....	.....	3,500	3,360
Net demand	257,600	250,297	118,000	107,415
Additions to stocks	*5,000	*32,718	†25,000	†15,052
Required from refineries from crude	*262,600	283,015	93,000	92,363
Yield, per cent	42.8	44	15	14.5
Crude runs to stills, total	616,000	640,106	616,000	640,106
Crude runs to stills, daily average	3,400	3,500	3,400	3,500
Stocks, September 30	*80,000	*70,992	48,000	38,138
Stocks, March 31	*85,000	*103,710	23,000	23,086

*Includes finished and unfinished gasoline. †Withdrawals from stocks.

DISTILLATE FUEL OIL—SUPPLY AND DEMAND—1939 AND FIRST 6 MONTHS OF 1940

Total United States (Thousands of Barrels)

	January	February	March	April	May	June	July	August	September	October	November	December	Total yr.
1939—													
Domestic demand	16,963	14,767	13,923	10,856	7,523	7,187	6,938	8,157	10,010	10,908	14,417	17,168	138,817
Exports	1,675	2,131	2,924	2,345	4,004	2,839	2,857	3,361	3,015	2,756	2,116	1,998	32,021
Total demand	18,638	16,898	16,847	13,201	11,527	10,026	9,795	11,518	13,025	13,664	16,533	19,166	170,838
Transfers from crude	548	489	480	472	516	560	570	558	562	602	571	563	6,491
Imports	44	127	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	171
Net demand	18,046	16,282	16,367	12,729	11,011	9,466	9,225	10,960	12,463	13,062	15,962	18,603	164,176
Change in stocks	*3,924*	*3,573*	*2,828*	572	1,342	4,064	3,463	2,286	512	1,955	*2,205*	*4,170*	*2,506*
Refinery production	14,122	12,709	13,539	13,301	12,353	13,530	12,688	13,246	12,975	15,017	13,757	14,433	161,670
Distillate fuel-oil stocks	32,300	28,727	25,899	26,471	27,813	31,877	35,340	37,626	38,138	40,093	37,888	33,718	
1940—													
Domestic demand	22,787	17,930	16,494	12,210	10,059	7,327							
Exports	1,549	1,234	2,318	1,966	2,130	2,129							
Total demand	24,336	19,164	18,812	14,176	12,189	9,456							
Transfers from crude	532	538	554	596	575	508							
Imports	.....	542	358	326	201	159							
Net demand	23,804	18,084	17,900	13,254	11,413	8,789							
Change in stocks	*7,256*	*1,822*	*1,554*	2,006	3,128	5,365							
Refinery production	16,548	16,262	16,346	15,260	14,541	14,154							
Distillate fuel-oil stocks	26,462	24,640	23,086	25,092	28,220	33,585							

Italicized figures indicate decreases.

transfers now are included in the demand as calculated by the bureau, provision must be made for them in any forecast of the future situation on a Bureau of Mines basis.

The figures published in the accompanying table are on the new basis. They cannot be compared with the published figures for 1938 and prior years without reversing the adjustments. However, as distillate fuel oil is coming into its own so rapidly as a second major product of the industry, it is more important to have accurate and usable figures over the past year or two than to have comparative figures of doubtful value over several years.

Because of the fact that the domestic demand for distillate fuel oils east of California has increased much more rapidly than it has in the Pacific Coast territory, it is generally advisable to study the position east of California only. Generally, an analysis of the east-of-California situation is further broken down into correlated refining districts. The East Coast, Louisiana Gulf Coast and Texas Gulf Coast are generally considered together; likewise the territory comprising Indiana, Illinois, Kentucky, Oklahoma, Kansas, Missouri, Arkansas, North Louisiana, and inland Texas is frequently considered as a single entity. The tables published herewith show merely the total figures for the territory east of California.

Using these figures as a basis, it is interesting to make a calculation of the requirements over the 6 winter months and such a calculation is shown in condensed form for the entire United States in the attached table together with comparative figures for the previous winter and a similar calculation of the gasoline requirements.

It is estimated that the domestic demand for gasoline will show an increase of about 5½ per cent. Gasoline exports are estimated at about one-half of the previous winter. Contributing to the required supplies, natural gasoline and benzol blended and used direct are estimated at about the same as the previous winter. As stocks of gasoline at September 30 will be in the neighborhood of 80,000,000 bbl., it will be necessary to add only about 5,000,000 bbl. to inventories over the 6 winter months to achieve the 85,000,000 bbl. which is ordinarily looked upon as an economic level at March 31. The required supplies of gasoline from crude amounting to 262,600,000 bbl. can be produced at a yield of 42.8 per cent from 616,000,000 bbl. of crude which over this period of 182 days is equal to 3,400,000 bbl. a day.

Turning now to the distillate-fuel-oil calculation, it is estimated that the domestic demand will be up as much as 12 per cent. Should the winter be mild the increase probably will not be as great as this, but should it be a duplication of the previous winter it may run slightly higher. It is estimated that exports of distillate fuel oil will show a further reduction. It is estimated that the import movement which began very definitely last February will be continued and that 1,500,000 bbl. will come from this source. The transfers which account for something over 500,000 bbl. a month will supply another 3,500,000 bbl. Stocks of distillate fuel oil at September 30 probably will be on the order of 48,000,000 bbl., and with proper geographic distribution can be reduced to about 23,000,000 bbl. on March 31, 1941; consequently, some 25,000,000 bbl. of required supply can come from storage. The net amount of 93,000,000 bbl. must be made from crude oil. There has been a tendency over the year for the refiners to maintain their distillate-fuel-oil yields slightly higher than last year and it is contemplated that over the 6 winter months a yield of not less than 15 per cent will be realized. At this yield the required new supplies of 93,000,000 bbl. can be produced from the same 616,000,000 bbl. of crude oil that were found to be required in the gasoline calculation. In conclusion it is important to note that the industry is now in position to balance the output of its two major products and that it is quite likely to do so over the coming winter with runs to stills held at a level of 3,400,000 bbl. a day.

NEXT WEEK

The Annual Pipe Line Number

Reflecting one of the most active pipe-line construction periods in the history of the petroleum and natural-gas industries The Oil and Gas Journal's Annual Pipe Line Number, September 19, will include:

Four-color, 33x48-in. insert map of the major natural-gas systems in the United States. It will include the routes of four mammoth proposed systems for which application has been made. Included in mail subscribers' copies.

Modern practices in laying and operating pipe lines will be discussed in articles specially prepared for this number by several of the industry's leading technologists and operators.

Several pages will be devoted to the increasingly popular "Practical Suggestions" of particular value to the men who build and operate the lines.

Complete personnel surveys of the companies operating crude-oil, natural-gas and gasoline pipe-line systems.

DISTILLATE FUEL OIL—SUPPLY AND DEMAND—1939 AND FIRST 6 MONTHS OF 1940

East of California (Thousands of Barrels)

1939—	January	February	March	April	May	June	July	August	September	October	November	December	Total yr.
Domestic demand	15,376	13,159	12,303	9,545	6,313	5,962	5,361	6,772	9,138	9,444	12,810	15,579	121,762
Exports	1,039	1,551	1,912	1,490	2,601	1,878	1,879	2,254	1,422	1,381	865	987	19,259
Shipments to East Coast	*230*	.....	.....	.....	.....	.....	.....	.....	*84*	*73*	*88*	*158*	*633*
Total demand	16,185	14,710	14,215	11,035	8,914	7,840	7,240	9,026	10,476	10,752	13,587	16,408	140,388
Transfers from crude	532	500	523	560	538	482	467	513	515	565	551	523	5,875
Imports	44	127	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	171
Net demand	15,606	14,182	13,808	10,597	8,436	7,358	6,773	8,513	9,961	10,187	13,036	15,885	134,342
Change in stocks	*4,000*	*3,548*	*2,864*	*129*	1,671	3,725	3,660	2,243	649	1,957	*2,096*	*3,963*	*2,965*
Refinery production	11,606	10,634	10,944	10,468	10,107	11,083	10,433	10,756	10,610	12,144	10,940	11,922	131,647
Distillate fuel-oil stocks	22,751	19,203	16,339	16,210	17,881	21,606	25,266	27,509	28,158	30,115	28,019	24,056	
1940—													
Domestic demand	20,876	16,188	14,996	11,124	8,688	6,167							
Exports	617	633	1,268	810	1,136	1,050							
Shipments to East Coast	*211*	*71*	.....	.....	.....	.....							
Total demand	21,282	16,750	16,264	11,934	9,824	7,217							
Transfers from crude	532	500	523	560	538	501							
Imports	.....	542	358	326	201	159							
Net demand	20,750	15,708	15,383	11,048	9,085	6,557							
Change in stocks	*6,682*	*1,717*	*1,873*	1,634	3,007	5,436							
Refinery production	14,068	13,991	13,510	12,682	12,092	11,993							
Distillate fuel-oil stocks	17,374	15,657	13,784	15,418	18,425	23,861							

Italicized figures indicate decreases.

DISTILLATE FUEL OIL—SUPPLY AND DEMAND—1939 AND FIRST 6 MONTHS OF 1940

California (Thousands of Barrels)

1939—	January	February	March	April	May	June	July	August	September	October	November	December	Total yr.
Domestic demand	1,587	1,608	1,620	1,311	1,210	1,225	1,577	1,385	872	1,464	1,607	1,589	17,055
Exports	636	580	1,012	855	1,403	961	978	1,107	1,593	1,375	1,251	1,011	12,762
Shipments to East Coast	230	.....	.....	.....	.....	.....	.....	.....	84	73	88	158	633
Total demand	2,453	2,188	2,632	2,166	2,613	2,186	2,555	2,492	2,549	2,912	2,946	2,758	30,450
Transfers from crude	13	88	73	34	38	78	103	45	47	37	20	40	616
Imports	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Net demand	2,440	2,100	2,559	2,132	2,575	2,108	2,452	2,447	2,502	2,875	2,926	2,718	29,834
Change in stocks	76	*25*	36	701	*329*	339	*197*	43	*137*	*2*	*109*	*207*	189
Refinery production	2,516	2,075	2,595	2,833	2,246	2,447	2,255	2,490	2,365	2,873	2,817	2,511	30,023
Distillate fuel-oil stocks	9,549	9,524	9,560	10,261	9,932	10,271	10,074	10,117	9,980	9,978	9,869	9,662	
1940—													
Domestic demand	1,911	1,742	1,498	1,086	1,371	1,160							
Exports	932	601	1,050	1,156	994	1,079							
Shipments to East Coast	211	71	.....	.....	.....	.....							
Total demand	3,054	2,414	2,548	2,242	2,365	2,239							
Transfers from crude	.....	38	31	36	37	7							
Imports	.....	.....	.....	.....	.....	.....							
Net demand	3,054	2,376	2,517	2,206	2,328	2,232							
Change in stocks	*574*	*105*	319	372	121	*71*							
Refinery production	2,480	2,271	2,836	2,578	2,449	2,161							
Distillate fuel-oil stocks	9,088	8,983	9,302	9,674	9,795	9,724							

Italicized figures indicate decreases.

STATE CAPITALS...

CALIFORNIA

A CONCERTED MOVE is under way on the part of the administrator for the Conservation Committee of California Oil Producers to secure complete compliance with the curtailment program and every indication points to success. This may not and will probably not be reflected in September production but should become a factor of importance beginning with October and thereafter. The Conservation Committee and the former Central Committee has never been able to secure complete compliance with the result that state production has always been from 20,000 bbl. to 35,000 bbl. above the prescribed allowable. L. P. St. Clair, the present administrator for the Conservation Committee and who is especially well qualified by reason of his various administrative offices with several oil companies, is bending every effort to smooth out the rough spots and appears to be succeeding where others have failed. Because of this move to secure more effective compliance with curtailment the entire outlook has taken on a greatly improved aspect.

KANSAS

KANSAS' ALLOWABLE PRODUCTION during September has been set by the Corporation Commission at 190,000 bbl. per day, an increase of 19,393 bbl. over the August allowable. The September figure exceeds the estimated market-demand figure set by the Bureau of Mines by 19,300 bbl. daily, but Theo A. Morgan, conservation director, stated at the recent allowable hearing that crude-oil purchasers had nominated 186,000 bbl. daily for September. Mr. Morgan said the new allowable includes 186,000 bbl. of current production and 4,000 bbl. daily for new wells completed during the month.

OKLAHOMA

OKLAHOMA'S SEPTEMBER ALLOWABLE was set at 390,000 bbl. daily, the same as in August, by the Corporation Commission on Monday following a hearing continued from the August 30 meeting. This places the state's allowable production 7,000 bbl. under the Bureau of Mines forecast for September. The order applies to all pools except South Burbank in Osage County, where operators of the unitized field proposed a 10 per cent cut. At the August 30 hearing it was virtually the unanimous opinion of operators represented that the August order be continued through September.

The September order contains only minor changes from the August schedule. The Cumberland field in the Denison Dam area was placed in the unclassified prorated group with a top allowable of 2,000 bbl. daily. The allowable of the Dill pool was increased from 856 to 1,000 bbl., including the Dill extension area. East Cromwell was placed in the unclassified prorated group with a top allowable of 350 bbl., and Prague was placed in the same group with a top allowable of 500 bbl.

No objection was voiced to the proposal that the state's allowable be maintained at 390,000 bbl. Several companies, however, gave their approval, or endorsed the commission's action in view of the fact that other compacting states did not reduce their allowables 5 per cent below market demand estimates as was recommended by the Interstate Oil Compact Commission.

A HEARING ON THE SOUTH BURBANK field was set for Friday, September 13, after W. F. Eaton, assistant oil and gas inspector, reported at the Monday hearing that the Osage Tribal Council at its meeting took a stand against the proposed 10 per cent reduction. R. B. F. Hummer, attorney for Phillips Petroleum Co., appeared for the unit operators and had two engineers present ready to testify that because of pressure-maintenance operations in the field, a reduction in allowable would prevent a waste of oil and gas and increase ultimate recovery of oil.

TEXAS

THE RAILROAD COMMISSION has issued a new order requiring that oil wells in the Panhandle field be tested within 30 days after completion and the results filed with the deputy supervisor, effective September 1. A portion of the new order is as follows:

"Each operator of oil wells in the Panhandle field shall file with the commission's deputy supervisor the results of a potential test on Form 3, Potential Test Form, and no allowable will be established by the commission until such form, properly executed, is received by the commission in acceptable form, provided that an operator may be granted a special clearance to enable him to complete his well, such special clearance to be charged against the allowable within 60 days of the completion of said well. Every well in the Panhandle field must be tested within 30 days after date of completion."

A JUDGMENT WAS ENTERED by District Judge Ralph Yarborough at Austin last week awarding damages to Agey Production Co. and the State of Texas in a suit against the American Liberty Pipe Line Co. for its failure to buy oil under the Common Purchaser Act. Agey had sued on two grounds, under Sections 8 and 11 of Art. 6049 for (1) failure to buy oil and (2) disconnecting without the consent of the producer. The case was tried before a jury, and the jury found for the plaintiff on both counts. The court, however, set aside the jury finding in regard to the second count holding the period of time found by the jury was not proved.

Judgment was for the minimum penalty of $100 per day for a period of 2 months, from June 15, 1938, date of the disconnection. Under the law, the state gets one-half the damages. Judge Yarborough said.

ONE OF THE STATE'S BIGGEST LAWSUITS, involving title to lands in the Hastings field of Brazoria and Galveston counties, valued at millions of dollars, is ready to go to trial October 7, state's attorneys have announced. The suit was filed to recover six alleged vacant tracts in the field, and its filing, during the administration of Atty. Gen. William McCraw, was one of the potent factors leading to the creation of a powerful lobby to rewrite the state's land laws. The six tracts aggregate more than 500 acres and include over 60 producing oil wells. Unofficial estimates place the value of royalty alone in this field at $5,000 an acre.

State's attorneys are confident that vacancies exist in the field, but the number depends upon the fixing of boundary lines. If the boundary lines were found by the court to be at one place, some of the alleged vacancies would be canceled out while others would be proved up. The case will be tried in Judge Ralph Yarborough's District Court.

PROTECTION FOR STATE WELLS in submerged areas was sought at a hearing in Austin last week by Dr. F. V. L. Patten, director of production for the Railroad Commission. The hearing was called at request of State Land Commissioner Bascom Giles. As land commissioner, Mr. Giles has authority to issue regulation that will protect the wells drilled in submerged areas belonging to the state, but that, Mr. Giles said, would not afford protection for adjacent wells on upland property adjoining the submerged area. Mr. Giles made no definite recommendation to the hearing on the method of protection, other than to point out that exposed christmas trees on wells were endangered during storm periods.

He suggested, however, that a contour map should be prepared, and protective piling be placed around christmas trees back to wells on land not higher than 12 ft. above sea level, or at least to a 6-ft. elevation. While the hearing was for all coastal and submerged areas, the danger was observed particularly in the White Point area.

Although not known as one of the major oil-producing states, Indiana's production is four times as great as in 1939. Activity is mainly in the southwestern area, although the old Cincinnati and Kankakee arch pools are enjoying a revival also. Gov. M. C. Townsend may have a proration problem dumped into his lap soon

ARKANSAS

THE PROBLEM of gas repressuring in the Schuler field, Union County, will be considered at the regular September state-wide hearing of the Arkansas Oil and Gas Commission. In answer to signed petitions Commissioner O. C. Bailey announced that the proposed project will be discussed by operators and other interested parties.

MICHIGAN

RECOMMENDATIONS FOR 20-ACRE rectangular drilling unit for the Clare County, Hamilton County, oil field were approved Monday in Lansing by P. J. Hoffmaster, well supervisor, and the Michigan Oil Advisory Board at a public hearing at which it was agreed no other proration changes in Michigan should be made, pending further study of cost factors involved. Sun Oil Co. asked for the Hamilton Township order, asserting formation is so porous as to make 20-acre units advisable. Surface conditions and pollution danger also were offered as supporting arguments. There was no opposition.

Proposed limit on proration units was designed to overcome practice of taking more oil from one well than its normal share to compensate for other wells on the same lease. Several independent operators protested, suggesting a basis of individual well potential. Mr. Hoffmaster said such practice would raise an impossible enforcement problem. Representatives of Sun and Pure Oil Co. supported the suggestion contending physical waste wouuld be eliminated.

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

Fine, But—

The plans to open the Pennsylvania turnpike next month as the nation's greatest superhighway to date recall the predictions of Charles F. Kettering at a meeting of oil men several years ago.

There was some confusion at the time as to the future of the gasoline-driven motor vehicle. The diesel engine was receiving wide attention, airplanes had crossed the continent between daylight and sunset and the railroads were awakening to the possibilities of better and faster service.

The General Motors inventor wanted two things—better motor fuels and better highways. Give the automobile manufacturers these, he said, and they would develop such power and speed that the motor vehicle would never be seriously challenged by any other form of transportation.

The improved fuels were needed that high compression and more powerful engines could be perfected.

In supplying these fuels, petroleum refiners in 10 years have exceeded the expectations of the car manufacturers. Antiknock ratings of gasolines have been greatly increased, enabling the manufacturers to raise horsepower in relation to weight.

Progress in highway construction has been much slower. Mr. Kettering said automotive and petroleum expansion would be retarded so long as motor cars have to be operated on highways originally designed for the oxcart and the horseback-rider.

He felt that our major highway systems with narrow roadbeds and circuitous routes passing around the hills and through towns and cities were as outmoded as the horse and buggy. Distribution of highway funds as political spoils was criticized.

The Pittsburgh-Harrisburg artery is a case where the cloth has been cut to fit the suit. The needs of transportation by motor were the primary consideration in the construction of the highway.

In the area in which it is located it is a major contribution to national defense. In time of national emergency this type of highway could be closed to all except the military and the motorized equipment of the modern army rushed to any part of the country more quickly than by any other form of transportation.

It provides speed with safety, minimum distance and maximum comfort for all types of motor vehicles. There are adequate service-station facilities without the motorists' view of the landscape being obscured by a confusion of signs and hamburger stands.

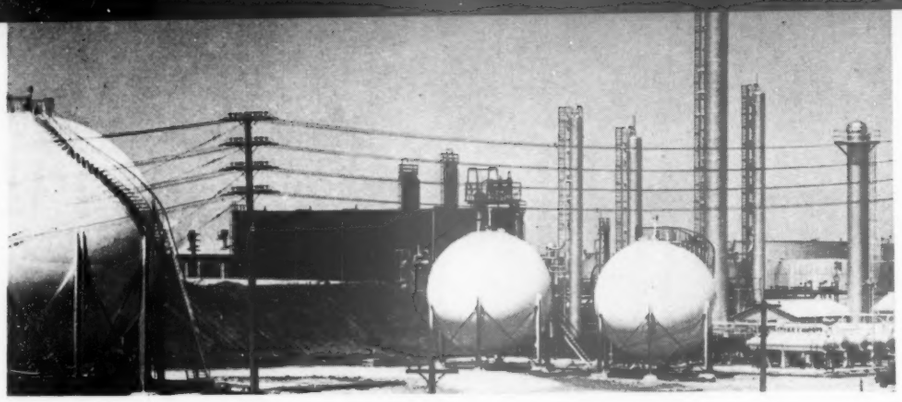
The petroleum and automotive industries have come a long way despite the handicaps of being forced to adapt their products to the habits and practices of another age.

A new era will have arrived when this and other countries are crisscrossed in all directions by motor highways replacing the glorified trails of the past and present.

Unfortunately in this program of the future as typified by the Pennsylvania turnpike there is a hitch—there is always at least one in anything that is for the betterment of the oil industry.

In this case, it is the toll which the users are to be charged. The two industries cooperating with the owners of cars, trucks and buses should lose no time in stopping this method of financing highways, a practice which in this country belongs to the colonial days.

Car owners are now paying close to 2 billion dollars yearly in tolls in the form of federal, state and municipal gasoline taxes and license fees. Funds which should be available from these tax collections, if efficiently expended, will build a nation-wide system of the best in road construction.



General view of Tide Water Associated new alkylation plant

Tide Water Associated Completes Alkylation Plant in California

By C. K. VILAND and JAMES SETH
Research Engineers, Tide Water Associated Oil Co.

PRESENT-DAY demands for increased production of high-octane aviation gasolines and improved motor fuels have prompted the Associated Division of Tide Water Associated Oil Co. to construct a sulfuric acid alkylation plant embodying the latest technical developments. The new unit, completed in June 1940, is producing high-octane fuels from isobutane and butylenes available at the Avon refinery, located on San Francisco Bay.

Some time ago the research and development department of Associated Division embarked on an extensive laboratory program to determine the applicability of alkylation in conjunction with other Avon refining processes. Preliminary results were sufficiently encouraging to warrant further study of the process on a larger scale. A pilot plant was therefore constructed and operated for many months under various arrangements of flow and with different kinds of charging stock. Results thus obtained indicated the desirability of adding alkylation to processing procedures then employed and decision was reached to proceed with the installation of a plant. The license for the process was granted by Shell Development Co. under its patent rights and those of Texaco Development Corp., Standard Oil Development Co., and Anglo-Iranian Oil Co., Ltd.

Contract for the construction of the plant was awarded to C. F. Braun & Co., of Alhambra, Calif. Through excellent cooperation from the contractor the plant was put on stream in the latter part of June 1940, 14 weeks after the contract was awarded. The process yields two types of alkylate, a light blending stock, testing 92-93 octane number, suitable for blending in high-quality products such as aviation fuels, and heavy alkylate of slightly lower octane number. The entire plant was designed with the idea of later increasing its capacity by 50 per cent by the addition of a second reactor unit. This enlargement can be accomplished with a minimum of change in the existing unit as fractionating towers, reboilers, heat exchangers, condensers and pumps are all designed for the enlarged capacity.

Charging stocks.—The principal hydrocarbons involved in the alkylation reaction are isobutane and butylene. The isobutane-bearing charging stock for the alkylation process is derived from three primary sources—cracking-plant operations, straightrun gasoline stabilization and butanes transported to the refinery from natural-gasoline plants processing gases from Tide Water Associated wells.

Butylene Charge Stock

The butylene charge stock is derived from two debutanizer units which handle the entire production of depropanized pressure distillate from three large cracking and reforming units. These debutanizer columns are capable of fractionating overhead up to 1,425 bbl. per day of butylene containing alkylation charge stock. The bottoms product from the debutanizer is a stabilized gasoline containing a maximum of 3 per cent butanes.

Three Hortonspheres were erected to provide working storage in connection with the operation of the alkylation plant. Straightrun butane containing propane, isobutane, and normal butane is stored in a 2,500-bbl. spherical tank designed for 75 lb. working pressure. Cracked butane stock containing isobutane, butylenes, and normal butane from the pressure-still debutanizer units is stored in a 2,000-bbl. sphere with a working pressure of 60 lb. per sq. in. A third sphere of 12,000-bbl. capacity and 60-lb. working pressure is provided to store the normal butane byproduct fractionated from the charge, until this material is required for gasoline blending or polymerization plant charge.

These spheres are painted with white tank lacquer to keep temperatures as low as possible.

Description of process.—The average charge is made up of 73 per cent cracked butanes and 27 per cent straightrun butanes, the latter being derived from crude unit stabilization and outside sources. The cracked butanes are charged one-quarter to the reactor unit and three-quarters to the alkylation deisobutanizer column. This split is made for the purpose of recovering the maximum amount of isobutane contained in the cracked butanes and to allow discarding surplus butylenes not required for alkylate production.

Table 1 shows the approximate composition of the charging materials.

TABLE 1—CHARGE TO ALKYLATION UNIT

	Cracked per cent	Straight-run per cent	Per cent of total charge
Propane	5.1	13.8	7.5
Isobutane	15.4	35.3	20.8
Butylenes	38.5		28.0
n-Butane	41.0	50.9	43.7
Heavier	....	....	....
Total	100.0	100.0	100.0

The deisobutanizer column is a 60-tray fractionating column operating under high reflux rates which cuts between isobutane and normal butane allowing the elimination of all normal butane and excess butylene from the system as the bottoms product. These butanes are used for gasoline blending and as charging stock to a large thermal polymerization plant.

The overhead from the deisobutanizer, consisting largely of isobutane together with propane and butylenes, is charged to a 40-tray depropanizer column where propane is eliminated from the system.

Conversion Into High-Octane Gasoline

The propane product is also charged to the Avon polymerization plant for conversion into high-octane thermal polymer gasoline. The bottom product from the depropanizer tower, consisting of isobutane concentrate, is charged to the reactor system along with the remainder of the cracked butane charge and sulfuric acid. In this specially designed reactor system the hydrocarbons are intimately contacted with fresh 98 per cent sulfuric acid and recycle acid in large turbine-driven centrifugal pumps. The Moore turbine powering this unit is operated by 150-lb. plant stream which is exhausted against 20-lb. back pressure. The exhaust steam furnishes a considerable portion of the heat required by the depropanizer and deisobutanizer reboilers. In Avon operations acid is withdrawn from the reactor system when it drops to 90 per cent concentration. The isobutane-to-butylene ratio in the charge to the reactor is maintained at between 5 to 1 and 8 to 1, which is about the optimum range to produce maximum yields of high-octane products.[1]

The fresh acid being charged to the reactor system is added continuously by means of a special variable-stroke plunger pump, which is capable of charging the proper quantity of 98 per cent acid required by the process, to keep the strength of the total acid in the system above 90 per cent.

A roof shelter without sides is installed over the reactor and acid-handling pumps.

The acid and hydrocarbon mixture discharged by the reactor-unit pump is cooled in a specially designed refrigeration exchanger unit.

By means of propane refrigeration, the heat of reaction is removed and the temperature in the reaction cycle is maintained at 40° to 50° F. The propane used in this cycle is compressed by means of two Worthington LCE-4 angle-type gas-engine-driven compressors. Each of these units is equipped with two 8-in. gas-compressor cylinders and the engines are equipped with a number of safety devices. These compressors, along with the starting-air system, are housed in a reinforced concrete building with hollow tile walls. In order to provide quiet operation of these units, Maxim exhaust silencers have been installed.

The mixture from the reactors, which is about one-half acid and one-half hydrocarbon, is freed from the acid in a separating vessel and the hydrocarbons neutralized in a conventional caustic mixing and settling apparatus.

The neutralized hydrocarbon products consisting mainly of alkylate and unreacted isobutane are charged to a 30-tray alkylate stabilizer where the alkylate is debutanized to Reid vapor pressure specifications and the overhead of recycle isobutane is returned to the deisobutanizer column.

(Continued on Page 98)

[1]The Oil and Gas Journal, Nov. 17, 1939, p. 104.

Defense Heads Seek Supply of Toluene for War Needs

By HENRY D. RALPH

WASHINGTON, D. C., Sept. 10.—While plans are being perfected to begin purchasing 100-octane aviation gasoline for a military reserve "stock pile," the National Defense Advisory Commission has begun a similar project to buy and store toluol (toluene) which may open up a market for this relatively new petroleum product.

Heretofore the only commercial source of toluol has been coal tar, produced as a byproduct at steel-plant coke ovens, but satisfactory toluol can now be made from petroleum and several oil companies have informed the Defense Commission that they are interested in going into this business. The material has a large and growing peacetime use as an industrial solvent, particularly for the newer types of paints and lacquers, and it is an essential in making the high explosive TNT (trinitrotoluol). During the World War toluol was an acute bottleneck in the munitions industry, but since then petroleum chemistry has advanced to the point where the oil industry can supply ample quantities if needed and the military authorities assert that there is now no fear of any shortage in this essential material.

No big volume of production of petroleum toluol can be anticipated until the Government completes and puts into operation the chain of half a dozen TNT plants now being contracted for, and officials will make no public estimates of how much toluol will be needed when TNT production reaches a peak. Production from coal tar is ample to meet present commercial demand and will increase as steel production is stepped up, but in order to avoid a temporary shortage during the time necessary to install equipment necessary to recover toluol from petroleum the Government plans to purchase a reserve stock up to 10,000,000 gal. The purchasing probably will be done through the Defense Supplies Corp., a subsidiary of the Reconstruction Finance Corp., in the same manner as the 100-octane gasoline-storage plan. Purchase will be made in such a way as not to increase the price or cause an artificial shortage, and also will not interfere with purchases by Great Britain. Toluol is one of the commodities subject to export licensing, and it probably can be assumed that licenses are being granted for shipments to England but not for export to other countries.

Both Coal-Tar and Petroleum Toluol

In building up the toluol stock pile the Government will accept offers of both coal-tar and petroleum toluol if the price is satisfactory, but officials hope and expect that several oil companies will find the business sufficiently attractive to warrant installing the necessary production equipment. The 1939 output of coal-tar toluol was approximately 25,000,000 gal. and this is increasing, and while the purchase of 10,000,000 gal over a period of months might absorb all surplus supplies in the country the Government is not inclined to pay a bonus above the current market price in order to induce petroleum refiners to enter the business.

According to a report just completed by the industrial-materials division of the Defense Commission, there are two methods of getting byproduct toluol from petroleum. The more important is the recovery of toluol in the production of high-octane aviation gasoline. It is estimated that supplies can be made available by this method at costs comparable with those prevailing at coke ovens. The second, and more costly, method involves the cracking of other petroleum products. Experimental production of toluol from petroleum has indicated that this is an entirely practical source of supply and that large volumes could be made available in a relatively short time by the installation of additional recovery equipment.

During the World War the capacity for producing toluol was nearly doubled, increasing from 12,000,000 gal. in 1917 to an estimated 23,000,000 gal. by December 1918. In order to do this, however, the Government induced city water-gas plants to install recovery equipment. Very small amounts of toluol are now recovered at water-gas plants and this source would not be relied on in another emergency since petroleum toluol is now available. While byproduct coke-oven output of toluol has been tripled since World War days, the production from this source is limited by the production of steel and cannot be expanded independently, whereas there is no practical limit to the amount which could be produced from petroleum.

New Production Methods

Relatively small amounts of petroleum toluol have been produced in recent years but most of this is of an impure grade which is not "nitratable" and while it is useful as a solvent it is not suitable for the manufacture of TNT. Newly perfected production methods, however, yield a petroleum toluol in every way comparable with coal-tar toluol. Defense officials decline to name oil companies with which they are negotiating for supplies, but from other sources it is understood that Universal Oil Products Co., Shell Oil Co., Inc., and Standard Oil Co. of New Jersey have perfected processes and are planning to enter the market.

Actual purchases for the aviation-gasoline stock pile have not yet started, but the buying machinery has been perfected and invitations to sell will be issued shortly. Congress has passed the $5,000,000,000 supplemental defense appropriation bill carrying authority and funds for the Army and Navy to start a $7,500,000 program of constructing aviation-gasoline storage facilities at strategic locations. A committee of oil-storage engineers is working with the military authorities in designing the storage facilities, but until these are completed the producers of 100-octane gasoline will be asked to store the reserve supply under contract.

Charges that Mexican petroleum is being imported in violation of the antidumping act have been filed with the Treasury Department by the Independent Petroleum Association of America, but are not expected to result in any Government action. Officials of the Bureau of Customs, to which the protest was referred, state that on two other occasions, one of them quite recently, the bureau investigated similar charges and found no evidence on which to base a formal antidumping order. The I.P.A.A. protest mentioned importations by Sinclair Refining Co. and Eastern States Petroleum Co., and declared that Mexican oil is being sold in this country at prices much below prices for domestic crude of comparable gravity. The antidumping law, however, is restricted in its operation, and an antidumping order must be based on a finding by the Treasury Department that the import is being sold in this country at less than the wholesale price or cost of production in the country of origin, and it may be a political footnote that the antidumping law has been virtually a dead letter for the past 7 years although a considerable number of antidumping orders were issued every year under previous administrations.

Export-License Control Not Relaxed

Reports from Texas last week that considerable quantities of aviation gasoline are being exported to Japan from the Gulf Coast do not mean that the State Department has relaxed its export-license control or its embargo on shipments of aviation gasoline outside this hemisphere. Officials of the Division of Controls declare that the exports consisted of gasoline which, whatever its commercial designation, does not come within the definition of aviation gasoline used in the export-license regulations, and that these exports therefore do not require a license. There is no indication that the administration will relax its restrictions for the benefit of Japan, but on the contrary there is every reason to expect an increasingly stiffer attitude toward Japan, and probably exports of scrap iron and steel will be further restricted.

Excess profits taxation may be considered a joke in certain branches of the petroleum industry where profits have not been "excessive" recently, but if the bill is enacted in anything like the form in which it passed the House it may affect any corporation in the oil business even though its earnings are considerably below normal. The Senate finance committee is now engaged in attempting to revise the bill and the final outcome is a matter of conjecture, but scores of witnesses testified last week that the House bill would impose very heavy additional taxes on hundreds of corporations whose profits are normal or subnormal. The bill applies to all corporations, whether or not engaged in supplying defense materials, and it has very complicated methods of computing the "normal" profits before the "excess" profits taxes apply. So complicated are these formulas that many experts testified they are incomprehensible and impossible to administer. Corporations are given the option of computing "normal" profits on the basis of invested capital or average earnings during 1936 to 1939, but small and undercapitalized companies would be penalized under the first method, while companies electing the average-earnings method would have their normal corporation income tax raised to 25 per cent in addition to paying an excess-profits tax. So harsh is the bill that some experts asserted it would impose penalty taxes on many corporations which now pay very small normal income taxes.

Refinery tanks swing around the bend in Oil Creek. Independent plant of the Quaker State Oil Refining Corp. in foreground. Plant No. 2 of the Pennzoil Co. in background

Improvement in Pennsylvania After Fourth Price Cut

By A. C. MacINTYRE

OIL CITY, Pa., Sept. 10.—Slight declines in inventories of both bright stocks and neutrals in July—the first downward trend since the beginning of the year—and a small rise in shipments of bright stocks are the chief encouraging features of the Pennsylvania region picture, darkened by loss of export markets for lubricants, large stocks of refined products and the fourth consecutive cut in the price of crude oil since late in May.

Efforts to correct the background of the picture—crude-oil production and runs to stills—are in evidence, but were not drastic enough to prevent the latest cut in crude of 15 cents a barrel posted August 28. Meanwhile crude stocks are rising ominously.

The approach of the lower consuming season tends to discount the improvement effected, yet that may be offset by the expected increase in industrial activity due to the national defense program.

The region has not been able to shake off the staggering effect of the loss of about 25 per cent of its market for lubricating oils through the virtual wiping out of European exports by the war.

Position of Refiners

The fact that the last cut in crude, which brings the price of Bradford district down to $1.85 from the top price of $2.75 set at the first of the year, was initiated by a refiner illustrates the position of the refiners in the region. Previously prices were set by the largest producer in the field. Since June 29 one refiner has been paying 25 cents under the posted price for crude. The last reduction puts his price 10 cents under that posted. Purchases of crude have been curtailed by refiners from 75 to 90 per cent of their contracts with producers. The first curtailment, 10 per cent, was put in effect as early as April 1. A smaller concern is reported to be taking only 50 per cent of its contract.

The chief problem of the Pennsylvania refiner at the present time is the large inventories of bright stock on hand, about three times as great as shipments in July. Stocks of neutrals are about twice as great as shipments in that month. The position of the two lubes is unfavorable since there is about twice as much bright stock available from Pennsylvania crude as there is neutral.

With the export market, which was built up steadily during the last 10 years, wiped out the region must look to the domestic market to increase sales. Seeking to offset the loss, the Pennsylvania Grade Crude Oil Association has voted an increase in the advertising appropriation of in excess of $15,000 for this year.

Statistics of Picture

Turning to the statistical side of the picture, inventories of bright stock at the end of July were 462,642 bbl., a decline of 15,114 from the stocks at the end of June. The decline, while comparatively small, was the first since the beginning of the year when stocks starting backing up as the war demand subsided. Shipments of bright stock in July amounted to 147,627 bbl., an increase of 10,256 bbl. over June.

The contrast between July 1940 and the same month a year ago sets forth the picture more clearly. The 462,642-bbl. figure at the end of the 1940 month compares with 224,313 bbl. of July 1939, an increase in stocks of 238,328 bbl. Shipments in July 1939 were 280,986 bbl., compared with 147,627 bbl. in July 1940. However, the former figure was doubtless swelled by abnormal export demand.

From April to December 1939 the Pennsylvania region shipped over 200,000 bbl. of bright stock monthly with the exception of November. The 200,000-bbl. figure has not been reached in a single month in 1940. The highest was 178,121 bbl. in February and the lowest 97,102 bbl. in March.

The real upswing in inventories started that month and by April had crossed the 400,000-bbl. mark. The low point in inventories came in October when the figure was 167,784 bbl.

Shipments of bright stock for the first 6 months of 1940 were estimated at 844,968 bbl., compared with 1,154,985 bbl. in the January-June period in 1939, or a decline of 306,017 bbl. This is a drop of 26.5 per cent from the 1939 period, which showed a 4.41 per cent gain over the first 6 months of 1938.

The situation in neutrals has been similar but not to the same violent degree. Stocks of neutrals amounted to 303,807 bbl. at the end of July, down from the 310,385-bbl. figure of June, but up from the 241,517-bbl. total of July 1939. Neutral shipments, however, were more constant, not moving into the 200,000-bbl. figure monthly until July and maintaining a lower rate more steadily in 1940.

Shipments of neutrals in the first 6 months of 1940 are calculated at 932,467 bbl., compared with 931,048 bbl. in the January-June period in 1939, or an increase of only 1,419 bbl.

The contrast in price reaction for the two products is even more sharp. Bright stock, 25 pour, was bringing 16½ cents last September. In January, the low quotation on bright stock was 32 cents and the high on 10 pour was 36 cents. At the beginning of September prices are scraping on bottom. Ten pour is quoted at 14½ cents and 25 at 12 to 14 cents.

Crude Stocks High

The neutral price rise was almost as great but it leveled out on the way down. Neutral, 200 viscosity, was quoted at 18 cents in September. In January the low quotation for 200 neutral was 31 cents and the high 34½ cents for zero pour neutral. Early in September the price range was from 19 to 20 cents for 150 viscosity, 25 pour test neutral to 24½ cents for 200 viscosity zero pour.

Stocks of Pennsylvania crude are up now to the highest point of the year. The low point, 4,101,000 bbl. in March, was the lowest figure in 10 years.

The rise during July and August has been sharper with only one material decline in that period. Bureau of Mines figures for corresponding weeks in those 2 months of 1940 and 1939 follow:

Week—	1940	1939
July 6	4,506,000	5,749,000
July 13	4,568,000	5,722,000
July 20	4,626,000	5,757,000
July 27	4,686,000	5,682,000
August 3	4,582,000	5,654,000
August 10	4,666,000	5,684,000
August 17	4,675,000	5,673,000
August 24	4,715,000	5,534,000

International

Japan . .

Fuel Experts Busy With New Oil Policy

GOVERNMENT fuel experts here are engrossed in formulating an entirely new oil policy to cope with the gradual stiffening of the United States' far eastern policy which is believed to foreshadow further embargoes beyond the ones already enforced on aviation gasoline, refining installations and blueprints therefor.

In the 3 most recent years the United States furnished upwards of 80 per cent of Japan's total oil imports, and almost all aviation gasoline which Japan bought abroad.

For crude oil, fuel oil, and gas oil and lubricants Japan is looking to the Dutch East Indies, which at one time accounted for 35 per cent of Japan's imports in these groupings.

By virtue of a recent Dutch-Japanese trade agreement, Japan is in a position to bring strong pressure to bear on the Dutch government-general in case Tokyo's demands for preferential treatment should meet resistance. A test case has already been provided by the government-general's decision to raise the export tax on mineral oils by 5 per cent. Japan made a fearful diplomatic issue out of this fiscal measure, with the result that the hard-pressed Dutch promised to adjust the tax on Japan's terms.

Another fuel source has come into the picture as a result of European war developments. The British may find it more practical to buy oil in Venezuela and in the United States than to haul it from the Near East through the submarine-infested Mediterranean or via South Africa. This, at least, is what the Japanese hope will happen. Japan has, for several years, shown great interest in Near East oil. A new buying organization, to be known as Toa (East Asia) Oil Corp., and to be financed by 10 leading Japanese oil concerns, has been projected for the purpose of exploring these new business possibilities in the Near East. It is doubtful, however, whether Japan has a sufficient tanker capacity to draw on Near East oil resources to the theoretical limit. Some of the largest and fastest Norwegian tankers, once chartered to Japan, are now plying for England, and many of Japan's own tankers serve nonproductively as naval tenders.

Aviation Gasoline Real Problem

The real problem is aviation gasoline. Airplane fuels produced in Japan from imported crudes, either by straightrunning or by cracking, test way below the octane ratings required for operation of war planes. Tetraethyl lead, too, is on the restricted list. Plans are under way to produce the chemical in Japan, but it may take a year before they bear fruit. There is a small polymerization plant for the synthesis of isooctanes from cracking gases (owned by the Japanese subsidiary of Tide Water Associated Oil Co.), and another is under construction by the Japan Petroleum Co. Owing to the poor quality and inadequate quantity of cracking gases available in Japan at any given location, these plants can meet but a fraction of the demand for antiknock compounds.

Year ago the army sponsored establishment of a 50,000,000-yen East Asia Fuel Industry Co. which was to produce synthetic aviation fuels by one of the newer American catalytic-cracking processes. Company experts were sent to the United States to buy equipment and blueprints, but the plan was foiled by the specific American embargo on refinery plant and blueprints as applied to "nations bombing civilians." The army is now tinkering with its own secret process, and construction on a plant has started. No matter what its jealously guarded capacity and efficiency may be, it is not available for production right now, and probably not for a year to come. Japan is playing for time with a reserve of imported aviation fuel, but no one knows just how large it is, though imports during the first few months of this year are known to have been considerable and probably beyond immediate requirements.

Press Attacks Oil Concerns

The recent roundup of alleged British espionage suspects also involved several members of the statistical department of the Rising Sun-Shell Oil Co., including the head of the department, Theodore Wolley. Mr. Eli, president, was temporarily held for questioning. The Japanese press availed itself of the occasion to shoot a broadside of editorials against foreign oil concerns, alleging that their nation-wide distribution and storage system is but a cleverly disguised scheme to gather secret military information on a broad geographic scale. In a war ministry-sponsored antiespionage exhibition charts were shown insinuating that the firms have purposely established agencies near fortified zones and vital munitions-manufacturing centers.

Japanese imports of "other oils and fats" for the first 5 months of 1940 aggregated 136.8 million yen, as compared with 107 million yen for the corresponding period last year. Considering the deperciation of the Japanese currency and the greatly enhanced weight of freight rates (Japanese statistics are calculated on a c.i.f. basis) the increase in the physical volume of imports is probably slight.

Statistics on oil exports are more obscure, the grouping "other oils and fats" being known to include animal oils besides mineral oils. Shipments for the first 5 months amounted to 23.7 million yen, as compared with 8.6 million yen for the corresponding period of 1939.

Mexico . .

May Investigate Contract With Coastal Refinery

INVESTIGATION of a contract between a Gulf Coast refinery and the Mexican Government may shortly be started by the Treasury Department, as the result of a complaint by an association that the Mexican Government in cooperation with the coastal refinery is violating the federal antidumping act. It is charged by the complaining association that the Mexican Government is subsidizing the refinery, and that a contract has been under negotiation whereby 20,000,000 bbl. of Mexican oil will be refined annually by the Gulf Coast refinery.

While no official statement has been made by the Treasury Department as yet that an early investigation will be instituted, counsel for the complaining association claims that unofficial assurance has been received.

Meantime, internal troubles of the nationalized industry in Mexico do not diminish. Companies whose properties were expropriated and for which no settlement has been made have protested the third and highest valuation submitted in the Mexican government directed appraisal, and have announced that they would not participate in the adjustment conferences which are scheduled to be called to adjust differences and arrive at a single figure for official indemnification.

Late last month a serious fire at the Pemex refinery at Atzcapotzalco, on the outskirts of Mexico City, caused damage estimated at $800,000. It has been announced that the destroyed portions of the refinery will be rebuilt.

Extent to which the revenue from Mexican petroleum operations has declined since it was mostly transferred from private to government ownership was disclosed in a statement on export values. Vicente Cortes Herrera, general manager, announced that sales had declined from a monthly average of $2,100,000 in preexpropriation months of 1938 to $300,000 at the present time. Part of the decline was blamed on the European war. Senor Herrera said that internal sales had increased 20 per cent but that this was insufficient to offset the export losses.

The complaint of labor unions that managers of the expropriated industry are incompetent was revived recently. The syndicates went on record with the blunt suggestion that the government obtain trained men to run the industry. Incompetent management is blamed by the unions for the recent efforts to institute operating economies involving wage cuts and dismissal of excessive workers.

Peru . .

Government Extending Its Petroleum Activities

THE Peruvian Government is said to be extending its activities in the exploitation of the nation's petroleum resources. Three fields are now under development in the Zorritos, Cope and Punta Brava districts. The Brava field, which is 60 kilometers south of Zorritos, is new and oil is reported to have been struck there at 365 meters. This well is said to have a daily production at present of 80 bbl., which production may be increased with the deepening of the well. Ten additional wells in this district, which is one of the zones reserved for the state, are under consideration. Another zone, located north of Zorritos, and known as La Garita, is now being explored.

A new government refinery at Almirante Villar has been completed, as well as the installation of a floating pipe line. The government has purchased a 1,400-ton tanker for the transportation of refined petroleum.

Exploration is being carried on at the Pachiten concession is eastern Peru, where several wells are said to have become producers. Construction of a 1,000-bbl. refinery is expected to begin soon.

German Oil Position Bolstered By Europe's Political Changes

NEW YORK, Sept. 10.—Political changes in Rumania during the past week indicate that Germany will be able to dictate to the entire oil industry of that country for all practical purposes, and may be able to increase its imports of Rumanian petroleum products.

During recent months these imports have been increasing and during the summer have been running around 200,000 metric tons of all petroleum products per month (7 U.S. bbl. per metric ton). Before the abdication of King Carol, Germany had expected to receive approximately 1,600,000 metric tons of oil from Rumania during 1940, and this total now may be increased somewhat.

Information reaching this country through various channels from sources believed to be reliable indicate that Germany's production and imports of petroleum and products will total in the neighborhood of 10,000,000 metric tons in 1940, which is calculated to be sufficient to cover all military and rationed civilian consumption in Germany proper and occupied countries without drawing on reserve stocks. The size of Germany's reserve stocks is not known with any definiteness, but during the year she has increased production from both natural and synthetic sources, and acquired large stocks by conquest, and has increased imports from European sources.

Russian Shipments Increase

Russian shipments to Germany have been increasing and during July were about 148,000 metric tons. Total Russian exports to Germany during 1940 are expected to be about 1,000,000 metric tons, which is double the shipments of any year since the World War. Authoritative observers believe the German army seized approximately 3,000,000 metric tons of oil during its invasion of France, including a considerable amount of aviation gasoline. Other large stocks probably were taken over from other occupied countries.

Germany is making every effort to increase oil production from sources under its control, including its own limited amounts of natural crude. New wells are being drilled in Austria and some new production has been brought in from the Zistersdorf field. Petroleum from natural sources in Greater Germany has been estimated to amount to at least 1,000,000 and possibly 1,300,000 metric tons in 1940, and German technicians are attempting to step up production in occupied Poland. Synthetic production from all sources in Germany is estimated at about 3,000,000 metric tons for 1940. The new Poelitz synthetic-gasoline plant near Stettin is already in partial production though not yet entirely completed. A recent decree even requires reclaiming oil from used fuller's earth.

A little-known source of oil for Germany is production from shale in Estonia, which has been increasing rapidly with the assistance of technical advice and new equipment from Germany. It is believed that these shipments are continuing without interruption since Estonia became part of the Soviet Union. During 1939 Estonian shale-oil production amounted to 180,000 metric tons, of which Germany took 90,000. During the first 3 months of 1940 production increased to 197,000 metric tons, practically all of the increase going to Germany, and in addition all stocks were exported so that Germany probably received around 200,000 metric tons of Estonian shale oil during the first quarter of this year. It is understood that Germany plans to receive about 500,000 metric tons of crude shale oil from Estonia per year. With refinery losses of 112,000 tons, this would yield approximately 70,300 tons of gasoline, 16,000 tons of motor petroleum, 7,800 tons of diesel oil, 22,400 tons of bitumen, and 372,300 tons of fuel and impregnation oils, as well as lesser quantities of asphalt, carbolineum, phenolate, and other by-products.

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THE MARKETS*

CRUDE OIL: Continued low production in Illinois is acting to firm crude markets in that area and throughout the Mid-Continent. Action of various oil-compact states in setting high September allowables, in an attempt to regain markets lost to Illinois, however, may act as a detriment. Especially so, in view of the fact that during the last week of August over 2,000,000 bbl. of crude were added to storage. In North Texas one major purchaser adjusted its prices upward to a level with those posted by other buyers. In Van Buren County, Michigan, prices were adjusted upward to a parity with other fields of the state.

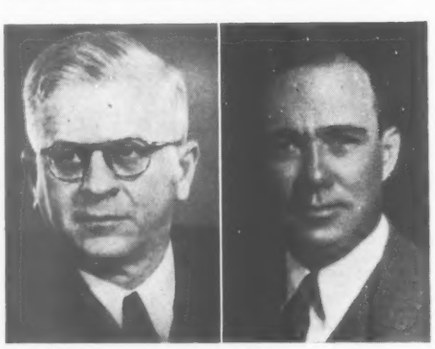
REFINERY: Further weakening in the tank-car price structure of gasoline on the West and East Coasts was noted, but in interior markets quotations remain unchanged, aided to a great extent by heavy buying to replace stocks lowered by the Labor Day holidays. Distillate fuel-oil demand is seasonally gaining momentum and while prices remain unchanged increases are generally expected. Movement of natural gasoline likewise is good at unchanged quotations, except on the West Coast where prices were lowered.

TANK-WAGON AND POSTED DEALER: Widespread reductions in tank-wagon and dealer gasoline were made on September 10 in much of its trade territory by Standard Oil Co. of New Jersey as further weakness developed in East Coast markets. The cut was 0.5 cent except at subnormal points. In Indiana and Ohio slight reductions were made at a few points on September 3.

FINANCIAL: Oil securities again posted good gains during the past week, with the average closing quotation being about 0.7 point higher than at the close of the previous week. Average of 30 representative stocks for the week ended September 7: High, 22.42; low, 21.13; close, 22.09. Week ended August 31: High, 21.44; low, 20.57; close, 21.32.

*Detailed information in Market Section.

California Standard Executives



J. H. MacGaregill (left), who was recently elected to the board of directors of the Standard Oil Co. of California, and B. W. Letcher, right, newly elected secretary and comptroller of the same company

DEATHS

JOHN M. WILSON, 64, chairman of the board of the National Supply Co., died September 6 at his home in Pittsburgh, Pa. Mr. Wilson graduated from Bucknell and Harvard universities, and joined the sales staff of the National Supply Co. at Beaumont, Tex. He was taken seriously ill in 1902, while with National, and returned to Franklin, Pa., to regain his health. After a year of recuperation, he entered the Franklin Trust Co. and remained with that concern until 1908, when he rejoined the National Supply Co., of which his father was one of the founders and presidents. In 1924, Mr. Wilson became president of the company, and in 1939 was named chairman of the board.

In addition to this position, Mr. Wilson at the time of his death was a director of the First National Bank in Pittsburgh and the Peoples Pittsburgh Trust Co. He was a member of the board of trustees of Bucknell University, was a member of the Knights Templar, and held memberships in several eastern clubs.

On April 12, 1910, Mr. Wilson was married to Rachel Brundred, of Oil City, who survives.

WALTER C. MARMON, chairman of the board of directors of Marmon-Herrington Co., Indianapolis, Ind., died August 29 at his home in Brendenwood, Indianapolis.

JOHN Q. LOVE, pioneer oil operator in the development of northeastern Wyoming, died August 28, at his home in Osage, Wyo. He was also interested in developments in the Manville field of Southwest Texas at the time of his death.

JOHN S. ALCORN, 49, head of the Alcorn Oil Co., Tulsa, died in a hospital in that city on September 7 following a long illness. Mr. Alcorn was formerly a vice president of the old Marland Oil Co.

ANTHONY C. BOYLE, 53, driller for South Penn Oil Co. for many years, died at his home in Rew, near Bradford, Pa., on September 5.

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I.P.A.A. Subcommittee to Study Compact Commission's Functions

The Independent Petroleum Association's subcommittee which was appointed in July for the purpose of studying the functions and results to date of the Interstate Compact Commission, met in Fort Worth, Tex., on September 9. Thirteen members of this committee, under the chairmanship of J. S. Bridwell of Wichita Falls, discussed the subject which was assigned to them for study without reaching conclusions. Before adjournment it was decided to schedule a two-day meeting for September 26 and 27 in Fort Worth, for further deliberations.

Michigan Severance Taxes Show No Decrease

Michigan severance taxes for July were $34,494, about equal to the June total, the state Tax Commission reported last week. The tax was paid on production of 1,625,998 bbl. of crude oil valued at $1,650,753 and 729,860,800 cu. ft. of natural gas valued at $73,947. The tax goes 40 per cent to the state, 20 per cent to the county and 40 per cent to the township, city or village source of production.

Decreased Exports Emphasize Growing Need of Expanding Domestic Oil Markets

By PAUL TRUESDELL
Universal Oil Products Co.

HOW TO SELL MORE GASOLINE . . .

War wipes out half our gasoline export market—17,000,000 bbl. a year—and more is likely to be lost.

At the same time, domestic consumption, of its own accord, keeps going up every month.

Advertising can increase this domestic gallonage still more to offset the loss of foreign outlets—and then some.

Advertising has done many difficult things—this would be easy—just inducing people to drive more (they like to drive) to travel more by bus—to ship more by truck.

If every motorist drove 50 miles more per month he would burn 1 bbl. more gasoline per year; 30 million cars, 30 million barrels.

Added cost per motorist, (at 18 cents per gallon) $7.56 per year.

Added gross revenue to oil industry (retail price) $226,800,000 per year—for gasoline alone, not to mention additional oil, tires, lamps, and so on.

Result to motorist, bigger return on his investment in his car—and more fun.

PAUL TRUESDELL

IN every year but two since 1925, American motorists have set new high records for gasoline consumption. The exceptions were 1932 and 1933 in the depth of the depression. Starting upward again after 1933, the consumption curve is still rising.

And while American refiners have been enjoying this steadily growing market at home, overseas demand has offered an additional market for substantial quantities of gasoline.

Now this export demand has been suddenly cut in half by the war.

Figures from the U. S. Department of Commerce show what this means. In the first 6 months of 1939, before the war started, overseas shipments of gasoline totaled 18,787,000 bbl., or at the rate of 37,574,000 bbl. per year.

In the first 6 months of this year export shipments had dropped to 10,306,000 bbl., or at the rate of 20,612,000 bbl. per year.

So the outlet for about 17,000,000 bbl. of gasoline a year has vanished as completedly as the gasoline itself would evaporate in the sun.

Just recently Washington placed the export of certain kinds of gasoline under license restriction, and it is likely this will cut down export shipments still more.

There seems to be nothing we can do about it right now.

There is no use crying over spilled milk or lost gasoline markets. It is not the purpose of this discussion to view with alarm, but simply to bring up for consideration some constructive suggestions.

If we can't help the export situation at present, let us turn our attention nearer home where the picture is more encouraging. In June 1940 the last month for which the figures are reported by the Bureau of Mines, export shipments declined 1,296,000 bbl. as compared with June 1939 but domestic demand increased 5,647,000 bbl. This far more than offset the loss in export gallonage, leaving an overall net gain of 4,351,000 bbl. of gasoline.

Must Provide Stimulus

But we can hardly expect that domestic demand will keep on growing of its own accord at a rate to offset for long the loss of such a great part of our export market.

In 1925 the average number of motor vehicles in service was 17,321,000 and the total motor-fuel consumption was 8,700,000,000 gal. or 502 gal. per car. Gallonage per car has been going up steadily ever since.

In 1939 the average number of motor vehicles in service was 28,532,000 and the gasoline consumption was 20,654,592,000 gal. or 725 gal. per car—17 bbl.

That means that while the number of cars on the road was increasing 65 per cent in 15 years, consumption of gasoline was increasing 138 per cent.

Inasmuch as this has come about practically without any effort on our part, why can't we, by aggressive and intelligent advertising, accelerate this rising curve, put a saddle on it and ride it to new heights?

The motor manufacturers are encouraging more driving by building better cars all the time and selling them in increasing numbers. Federal and state governments and local political subdivisions are promoting it by improving roads.

We have more to gain than any other industry from increasing the gasoline market. Why don't we get busy?

Right there I bang head on into one of the oldest fetishes of the oil industry; namely, that gasoline consumption cannot be increased by anything we can do, that it is governed by an act of God, or something, against which all efforts of man are unavailing.

But is that true?

It is a favorite saying of Charles F. Kettering, genius of General Motors, that it isn't because we don't know enough that our march of progress is slowed up and halted from time to time, but because "we know so many things that aren't so." Let's not permit a ghost to keep us from increasing our gasoline market.

Industry Large Advertiser

The industry has never been stingy about advertising. Oil companies are among the largest of advertisers, spending millions every year, but because it is a settled conviction that gasoline demand is a pool of fixed size containing just so much, practically all the motor-fuel advertising is designed, not to cause motorists to burn more gasoline, but to grab for each advertiser a bigger share of the existing business.

In such a scramble, of course, some of the contenders lose out; sometimes it seems as if they all lose.

Why can't this pool of potential gasoline gallonage be substantially widened and deepened by advertising for the benefit of all—even including the motorist.

A cooperative promotion program, headed by the American Petroleum Institute, or perhaps by the joint effort of refiners and other oil-industry associations, could do it.

The best way to judge what intelligent and aggressive advertising can do is to look at some of the things it has done.

How could the market for Pennsylvania motor oil have been maintained against such fierce competition as it has been and at prices in line with its true worth except by such aggressive and well-conducted advertising and sales-promotion activities as are unceasingly carried on by the Pennsylvania Grade Crude Association?

Advertising has accomplished even more difficult things in other fields. It has reformed lifelong habits of people, it has changed their thinking, erased their prejudices, and impelled new motives and new action patterns.

What was it more than 30 years ago that brought man out from behind his whiskers to

face the world with a clean-shaven countenance? It was Mr. Gillette's safety razor that actually mowed the whiskers but it was Mr. Gillette's advertising that first convinced men that they ought to mow them and keep them mowed, and sold millions of razors to do the job.

Consider yeast. Chiefly sold to brewers in the old days, the bottom dropped out of the market with prohibition. It was necessary for the manufcaturers to find a new market, and they did.

Merchandising skill changed its form, put it up in handy, attractive packages, organized a nation-wide quick service for its distribution.

Then advertising put it across as a health food, and presently millions were eating it every day—and they still are.

It is the job of advertising not only to make people want things—that is the easiest part—but also to present reasons and arguments with which prospective buyers can, in their own minds, justify the purchase, prove to themselves that they not only should have but can have what they want. Give them reasons to buy. Then they find ways to buy and everybody is better off.

In Ideal Position

From all standpoints the oil industry is in ideal position to increase gasoline consumption by advertising. A large part of the job is already done for us. Consider that:

1. More than 31 million motor vehicles are now on the road, put there at no expense to us. And the number is increasing rapidly.

2. Thousands of miles of new roads are being built and old ones improved every year, at little cost to us (except that of collecting gasoline taxes).

3. Nearly everybody likes to drive a car, to burn gasoline, to ride buses and go places, as evidenced by the yearly increase in gasoline consumption without any stimulation from us.

4. We have at hand sound arguments to justify more driving—which means more gasoline burned per vehicle.

5. We would not have to increase this consumption per car very much in order to make a tremendous increase in total gallonage.

6. We could raise the money by assessing an infinitesimal fraction of a cent a gallon on the expected gallonage for the year. A twentieth of a cent a gallon on the 20 billion gallons consumed last year would raise an advertising fund of $4,000,000.

Half of that sum would finance a mighty effective campaign, and it would command the best talent in the advertising business. A minute fraction of it would pay for a test campaign in a limited territory, which would develop facts and technique to chart the course for a nation-wide effort.

The keynote of the campaign should be to give the motorist sound reasons why he would benefit by driving his car more.

Here is a suggested theme: "Get the Most Value Out of Your Car."

For a great percentage of automobile owners the purchase of a car is the largest investment they ever make; therefore, they ought to get the greatest possible return on it. The more they use the car the greater the return on the investment, in low-cost transportation and in pleasure and benefit.

And while it brings increased returns, greater use does not depreciate the value of the investment to any appreciable extent. A man who buys a new car and drives it 20,000 or 30,000 miles before trading it in will get just as much for it as though he had driven it only 5,000 to 10,000.

"Make It a Motoring Vacation" is another slogan that might be effective. Perhaps you think that everybody now drives his car on vacation. But it is surprising how many leave the vehicles in the garage and take trips by boat and train.

"Five Can Ride for the Price of One" is a hint that the whole family can go in the car where the cost by rail or boat would be prohibitive. And low-cost lodgings along the highways are increasing in number and in comfort. This also might well be brought out.

And right now is when we ought to be getting busy promoting this particular phase of travel, creating more business for ourselves, because our competitors are beating us to it.

Railroads Stronger Competition

The railroads are offering luxurious trips by rail at unbelievably low cost — and on easy payments. And how they are advertising. More and more persons and families are taking such trips now and paying the fare in installments later, while finance companies carry the paper.

This railroad policy is new, introduced just in time to catch the present vacation season. The returns are not yet in as to its effects.

But sooner or later it is bound to take its toll of gasoline gallonage unless we do something effective to counteract it.

We can give the automobile owner of limited means a better story than the railroads can, even with the present low rates—and keep him buying gasoline.

And roads are being so greatly improved, widened, straightened and engineered all over the country, that even on Sundays and holidays near the largest cities, congestion is hardly a problem any more.

And buses offer low-cost and comfortable transportation. Buses nowadays go everywhere on good roads—and they burn a lot of gasoline. The average annual consumption is 4,822 gal. per bus, according to A.P.I. figures.

In our advertising, therefore, we might well encourage travel by bus, and at the same time lend a word now and then to help along the "ship by truck" slogan of the highway haulers. Trucks are big gasoline eaters, too—average 1,069 gal. per year. Truck and bus gallonage is well worth cultivating.

Such a program would be simple to carry out. All we would have to do is to encourage the American people to do more of what they are doing already—and liking it immensely—to play along with human nature.

Not a very hard job.

And what results could we expect?

Suppose by advertising we could increase the per-car consumption by 1 bbl. of gasoline a year —42 gal. That would mean an additional 500 or 600 miles per year for each car. That isn't unreasonable to expect. Yet, with our 30 million cars it would make up almost twice over the export business lost this year. At 18 cents a gallon that would cost only $7.56 per year per car owner, or a little over 60 cents a month. For the oil industry it would mean an increase in gross revenue for the year of $226,800,000.

Careful Planning a Prerequisite

Here is one thing that is very important. Jobbers, dealers, retailers of all kinds ought to be thoroughly informed well in advance of every step the campaign is to take, so they would be ready to cash in on it to the fullest extent possible by tying in their own advertising and promotion efforts individually. This should be done through advertising in trade papers, direct mail and by every other available method.

Such an advertising program would not take the place of any promotion effort now being carried on and should not be the excuse for cutting down the appropriation of any company now doing individual advertising to promote the sale of its own products. Such efforts might well be increased because there would be more business to go after.

It should be a common overriding enterprise calculated to make individual company sales efforts more effective by creating gasoline gallonage where none existed before.

And it could increase the sum total of gasoline business so much that its cost would be quickly forgotten in the lasting benefits it would bring to the entire industry all the way back to the well.

HELP DEDICATE BUILDING . . .

These four Cities Service Oil Co. officials participated in the opening of the company's New England headquarters in Boston. They are J. A. Kelley, sales manager; C. E. Foster, vice president in charge of marketing; John S. Cordell, vice president and general manager, and H. E. Brandli, vice president in charge of exports. More than 200 guests attended the special preview of the new headquarters, a six-story structure which will be occupied exclusively by Cities Service

United States Consumption of Gasoline Up 6 Per Cent

NEW YORK, Sept. 10.—The United States increased its consumption of motor fuel 6.35 per cent in the first 6 months of this year, in comparison with the similar period in 1939, according to American Petroleum Institute reports.

North Dakota led the states in showing increased demand for gasoline, the increase in this state amounting to 25.65 per cent.

Montana consumption rose 13.98 per cent, while increases of more than 10 per cent were recorded in six other states, Tennessee, Indiana, Florida, Idaho, South Dakota and Oregon.

Of the five large consumption states of California, New York, Illinois, Ohio and Pennsylvania, the latter three had gains larger than the country as a whole, increasing 8.32 per cent, 7.22 per cent, and 8.02 per cent, respectively. Gallonage in California and New York was up 5.5 and 3.66 per cent, respectively.

Gallonage in June of this year increased more than the average for the first 6 months.

The increase, it is believed, was traced chiefly to a stimulated buying of gasoline prior to the enactment of the additional ½-cent gasoline tax for defense purposes, effective July 1.

Refinery Expansion

Wolverine-Empire to Move Offices to Oil City

OIL CITY, Pa.—Transfer of the offices of the Wolverine-Empire Refining Co. from Reno, Pa., to Oil City will take place upon completion of remodeling of the company's new headquarters in the Koch Building. The company will move virtually all of its officials, with the exception of the traffic department. Those officials who will continue to maintain headquarters at Reno will be A. W. Cole, superintendent, and B. H. Waterbury, production manager. The move is expected to be completed by January 1, 1941.

Cosco Plant to Be Reopened in Latter Part of September

The Cosco Oil Co. refinery at Wynnewood, Okla., is to be reopened the latter part of the month and will process 2,000 bbl. of crude daily to give the Tussy pool a much-needed outlet. The Cosco plant, of 2,000-bbl. capacity and containing cracking and asphalt-processing equipment, has been closed for about 2 years. Skelly Oil Co. and Cox & Hamon will supply bulk of the 2,000 bbl. daily, the refinery to pay the posted price of 60 cents per barrel. Skelly will handle marketing of the refinery's output.

"Question and Answer" Session To Be Held by W.P.R.A.

The regular monthly meeting of the Ark-La-Tex division of Western Petroleum Refiners Association will be held on Friday, September 13, 1940, in the Kilgore Hotel, Kilgore, Tex., beginning at 4 p.m. After a lapse of several months, during which time a number of especially noteworthy technical papers have been presented at the regular monthly meetings of this group, the members have elected to make the September meeting a "questions and answers" session. At this meeting members of the group are afforded an opportunity to discuss their intimate problems in frank and open manner, which has been beneficial and helpful in solving knotty operating and manufacturing problems.

As testimonial of the interest of refiners in the questions and answers sessions, it is stated at the W. P. R. A. office in Shreveport that more than 40 questions have already been submitted by 17 members of the group for discussion at the September meeting, covering, as the secretary points out, "a lot of territory." A. W. Trusty, chief chemist of Arkansas Fuel Oil Co., will preside.

Albany Building Small Plant Near Laramie

DENVER, Colo.—The Albany Oil & Refining Co., a newly formed company, is constructing a 100-bbl. skimming plant a mile north of Laramie, Wyo., and will have the plant in operation soon. Officers of the new company are N. A. Swenson, president; H. N. Roach, vice president; H. N. Horton, secretary-treasurer; H. H. Metzger, sales manager; and E. J. Nininger, general manager.

Survey Shows Adequate Supply Of Toluene Is Available

WASHINGTON, D. C.—The National Defense Advisory Commission has reported that the petroleum industry would be able to produce more than enough toluene, vital component in the manufacture of T.N.T., for United States military purposes in case of an emergency. This fact was made known last week, following a study by the commission in conjunction with the Army and Navy, and announced by Edward R. Stettinius, Jr., member in charge of the procurement of raw materials.

The report showed that present commercial needs of toluene can be met by recovery from byproduct coke ovens, and "experimental production of toluene from petroleum indicates this is an entirely practical source of supply. . . . Large volumes can be made available in a relatively short time by the installation of additional recovery equipment."

"Our present position is in sharp contrast with the situation prevailing during the World War," the report continued, "as at that time this country had only limited facilities for recovering coal-tar products and the difficulties of getting adequate amounts of toluene resulted in a serious bottleneck in our emergency production of war supplies. Regular commercial needs for toluene in certain types of paints, lacquers and other materials now easily can be met by recovery from byproduct coke ovens, and the petroleum industry will be able to produce more than enough for expected military purposes."

In 1939 approximately 25,000,000 gallons of toluene were produced in the United States. Since activity in the steel industry began to expand last fall, production of toluene from coke ovens has increased. Present capacity for output of toluene by water-gas plants and coke ovens is substantially in excess of current requirements. As a few months' time is required to install recovery and purification equipment at petroleum refineries, it has been agreed that a "stock pile" of toluene should be acquired in order to prevent the possibility of a temporary shortage of this very essential raw material. Supplies for some time can be made available through existing productive facilities, and as military needs expand additional capacity will come into use.

New Carrier to Be Laid to Socony-Vacuum Plant

CASPER, WYO.—Socony-Vacuum Oil Co. is soon to survey route for a new carrier from the Cole Creek field to the company's White Eagle refinery here. The line will be approximately 13 miles in length, and will consist of 4-in. welded pipe. Awarding of contract will be made soon.

New St. Boniface Plant Nearing Completion

OTTAWA, Canada.—The new refinery of North Star Oil, Ltd., being constructed near St. Boniface, Man., is nearing completion and is expected to be placed on stream shortly. The plant is of 2,000-bbl. daily capacity, costing about $300,000 and equipped with a Dubbs cracking unit, and was built primarily to operate on Turner Valley crude.

International Cuts Montana Purchases to 50 Per Cent

BUTTE, Mont.—International Refining Co. effective September 1 has reduced its takings from connected leases in the Kelvin and Cut Bank fields of Montana to a basis of 50 per cent of the potential established by runs during June. International has been taking 60 per cent of the potential, based on earlier figures, and the new rate is said to be based on increased takings from some properties which did not have a proper allowable under the former plan. Stripper wells are permitted to produce at capacity.

International has been taking about 190,000 bbl. per month, including 60,000 from Cut Bank and 130,000 bbl. of Kelvin crude. An additional 2,000 bbl. per day from Kelvin field is going to Producers Refining Co. at Cut Bank, to Big West Refining Co. and Treasure State Refining Co. at Shelby, to Cut Bank Refining Co. at Cut Bank, to Sweet Grass Refining Co. at Sweetgrass and to other plants. This 2,000 bbl. comes from wells which are operating at capacity.

News of Pipe-Line Activity, which is usually found on this page, will be found on Pages 68-69.

Natural Gasoline

Recycling Plant Announced For Southwest Texas Field

HOUSTON, Tex.—Plans to start construction of a 15,000,000 cu. ft. gas-recycling plant in the San Salvador field of Hidalgo County, Southwest Texas, have been announced by Gulf States Oil Corp. of Houston. The unit will take gas from several sands producing between 7,000 and 9,000 ft. in two wells drilled by the company, the wells also being used as input wells for the residue gas. Cost of the project is estimated at $250,000 and plans call for immediate construction.

Continental Proposes Plant For Hull-Silk Field

WICHITA FALLS, Tex.—Plans for the construction of a natural-gasoline and pressure-maintenance plant in the Hull-Silk field of Archer County, North Texas, were outlined to operators at a meeting here last Friday. The proposed plant is to be built by Continental Oil Co. at a cost of $300,000 to $500,000. The operators vetoed a proposal for the plant to be built on a cooperative, nonprofit basis.

E. O. Bennett, chief petroleum engineer, and M. H. Shanahan, assistant production manager, outlined the proposition in behalf of Continental, estimating that the cost would be paid out in 3 years of operation and operators would be charged on a per-well or acreage basis until the investment was realized. After that time price of the input gas would be reduced to cost.

A committee composed of Ed McFarlin, Chaplin & McFarlin; John F. O'Donohoe, president of Petroleum Producers; and John W. Thomas of Deep Oil Development Co., was appointed to work with Continental on the plans. The company is to conduct a survey of the field within 2 weeks. The Hull-Silk field is now slightly over 2 years old and has some 300 wells producing from 3,800 and 4,300-ft. pays.

Natural Gas

Natural-Gas Rates Raised In Wyoming Cities

DENVER, Colo.—Upon completion of the Billy Creek pipe line by Northern Pipe Line Co., the Northwest States Utilities Co. announced that rates for natural gas would be changed in Sheridan and Buffalo, Wyo. The new rates, higher than those previously in effect, were approved last February by the Wyoming Public Service Commission, to go into effect on the completions of a new gas pipe, bringing a new supply of gas from the Muskrat and Sand Draw fields in Fremont County. These new rates were deemed necessary because of the higher cost of delivering the gas from the new source, it was pointed out at the time the rate structure was approved by the Public Service Commission.

Construction of the new pipe line to secure a new supply of gas was made necessary by the dwindling of the reserves in the Billy Creek field south of Buffalo. The line, 95 miles in length from Casper to the existing line at Billy Creek, was completed about the middle of August, and the gas from the new source of supply was turned into the existing line on August 18.

PROGRAMS AND MEETINGS

W.P.R.A. Announces Technical Programs At Wichita, Kans., and Shreveport, La.

The programs for the regional technical meetings arranged by the manufacturing committee of the Western Petroleum Refiners Association under the chairmanship of L. D. Mann, Cities Service Oil Co., were announced last week by J. C. Day, secretary of the association. The first of the meetings will be held on Friday, October 4, at Wichita, Kans., the second on Friday, October 25, at Shreveport, La. Three papers will be presented at each meeting, followed by discussion from the floor.

One of the papers at the Wichita meeting will discuss the determining of manufacturing costs of refinery byproducts. While this has always been an extremely important subject, there is very little literature on it. The author of this paper has made a special study of it, and he will present his own ideas as well as the opinions of other authorities.

Catalytic refining in the past several years has come to the front and is one of the foremost methods of refining today. Two papers on the subject will be presented at Wichita, one on catalytic treating of gasoline, and the other a comparison of catalytic and thermal cracking.

Following is the program in detail for the Wichita session:

"Economics and the Relationship of Alternate Products to Refinery Margins," by C. E. Votrian, Bareco Oil Co., Tulsa.

"Comparison of Catalytic and Thermal Cracking," Socony-Vacuum Oil Co., Inc., in collaboration with E. B. Badger & Sons Co.

"Catalytic Desulfurization," by M. W. Conn, Perco, Inc., Bartlesville, Okla.

The complete program for the Shreveport meeting will be announced very soon. It also will cover timely subjects of interest to the refining industry today.

S.A.E. Fuels and Lubricants Meeting At Tulsa, November 7-8

The national fuels and lubricants meeting of the Society of Automotive Engineers will be held in Tulsa at the Mayo Hotel, November 7-8, according to B. E. Sibley, Continental Oil Co., S.A.E. vice president and general chairman of this particular meeting. Mr. Sibley states that an exceptionally fine program has been scheduled with papers by national authorities.

The committee on local arrangements consists of W. F. Lowe, Natural Gasoline Association of America, chairman; J. C. Day, Western Petroleum Refiners Association, secretary-treasurer; A. A. Hansen, Phillips Petroleum Co., Bartlesville, Okla.; G. C. Richardson, Indian Territory Illuminating Oil Co., Bartlesville, Okla., and Carl Tangner, Diesel Power & Machinery Co., Oklahoma City, Okla.

Appalachian Meter School Draws Record Attendance

The 1940 Gas Measurement Short Course held at West Virginia University, August 19, 20 and 21, drew a record attendance with 446 gas men from all over the eastern and southern United States registered. This course, jointly conducted by the university and the Public Service Commission of West Virginia, will from now on also be sponsored by the American Gas Association. This sponsorship was announced by Walter C. Beckjord, president of the association, who was one of the speakers. Other speakers at the general sessions included Dr. C. E. Lawall, president of the university; C. R. Bellamy, Columbia Engineering Corp.; Dr. Paul Price, West Virginia Geological Survey; A. J. McClellan, Manufacturers Light & Heat Co.; C. C. Phillips, Ohio Fuel Gas Co.; Thomas R. Weymouth, Columbia Gas & Electric Corp.; John Diehl, American Meter Co., and Ray W. Hitchman, United Fuel Gas Co., who served as chairman of the meter-school committee.

Meetings for the entire registration were held during the forenoon of each day. Speakers covered the field of measurement and control in a broad sense so as to be applicable and of interest to everyone attending the school. The afternoon sessions were devoted to classroom study of specific equipment and problems relating to gas measurement and regulation. These classes were conducted for the most part by engineers from the various equipment manufacturers. Displays by the participating manufacturing companies were located in the university armory.

A highlight in the 1940 session was the annual banquet and entertainment at which over 500 registrants and guests were seated. J. K. Buchanan of the Monongahela West Penn Public Service Co., presided as toastmaster.

R. W. Hitchman, chairman, Appalachian Gas Measurement Short Course; Walter C. Beckjord, president, A.G.A., and Charles E. Lawall, president, West Virginia University. Mr. Beckjord was a speaker at the assembly

CALENDAR

NATIONAL PETROLEUM ASSOCIATION, thirty-eighth annual meeting, Hotel Traymore, Atlantic City, N. J., September 18-20.

SOCIETY OF AUTOMOTIVE ENGINEERS, national tractor meeting, Schroeder Hotel, Milwaukee, Wis., September 24-25.

NATIONAL LUBRICATING GREASE INSTITUTE, annual convention, Stevens Hotel, Chicago, September 30-October 1.

NORTH AMERICAN GASOLINE TAX CONFERENCE, Whitley Hotel, Montgomery, Ala., October 3-5.

WESTERN PETROLEUM REFINERS ASSOCIATION, regional technical meeting, Wichita, Kans., October 4.

AMERICAN GAS ASSOCIATION, Atlantic City, N. J., October 7-10.

NATIONAL SAFETY CONGRESS, Stevens Hotel, Chicago, October 7-11.

INDIANA INDEPENDENT PETROLEUM ASSOCIATION, fall convention, Hotel Severin, Indianapolis, Ind., October 9-10.

AUTOMOBILE MANUFACTURERS ASSOCIATION, Auto Show, New York, October 12.

SOCIETY OF AUTOMOTIVE ENGINEERS, annual dinner, Hotel Commodore, New York, October 14.

INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA, eleventh annual meeting, Dallas, Tex., October 16-18.

AMERICAN WELDING SOCIETY, annual meeting in conjunction with National Metal Exposition, Hotel Cleveland, Cleveland, Ohio, October 20-25.

PETROLEUM DIVISION, A.I.M.E., October 24, 25 and 26, Tulsa.

WESTERN PETROLEUM REFINERS ASSOCIATION, regional technical meeting, Shreveport, La., October 25.

TEXAS MID-CONTINENT OIL AND GAS ASSOCIATION, annual convention, celebrating Texas oil's forty-fifth birthday, Fort Worth, Tex., October 31-November 2.

Asphalt Conference Will Stress National Defense Program

NEW YORK.—Sponsored by the Asphalt Institute the thirteenth national asphalt conference will be held at Dallas, Tex., during the week of December 9.

Because of the widespread use of asphalt in airport construction, supplementing its major use in the surfacing of highways and streets, the conference will stress the subject of national defense from a highway and airport angle. Col. Patrick J. Hurley, exsecretary of war, will deliver the keynote address on national defense.

Thomas H. MacDonald, commissioner of public roads, is expected to discuss highway problems in their relation to national defense. The state Highway Department, as host, will show the delegates Texas' hundreds of miles of asphalt surfacing of all types.

The function of asphalt in preventing erosion of river banks and lake shores, and in the lining of canals and ditches, will form an interesting feature of the conference.

The great potential improvement in railway roadbeds through the use of asphalt ballast with elimination of dust, lowering of vibration and economy in maintenance will engage the attention of the railway personnel.

It is expected that some 2,000 engineers, technologists, contractors and representatives of the petroleum industry will be in attendance.

Los Angeles Basin A.P.I. Chapter Papers of Fall Meeting

The Los Angeles Basin chapter of the Division of Production of the American Petroleum Institute held its September meeting on Tuesday evening, September 10, in the Shell Oil Co., Inc., recreation hall, Long Beach, Calif.

An interesting and instructive program was heard as follows.

Thomas A. O'Donnell, pioneer California oil man, and first president and early organizer of the A.P.I., spoke on "Early Days of the A.P.I."

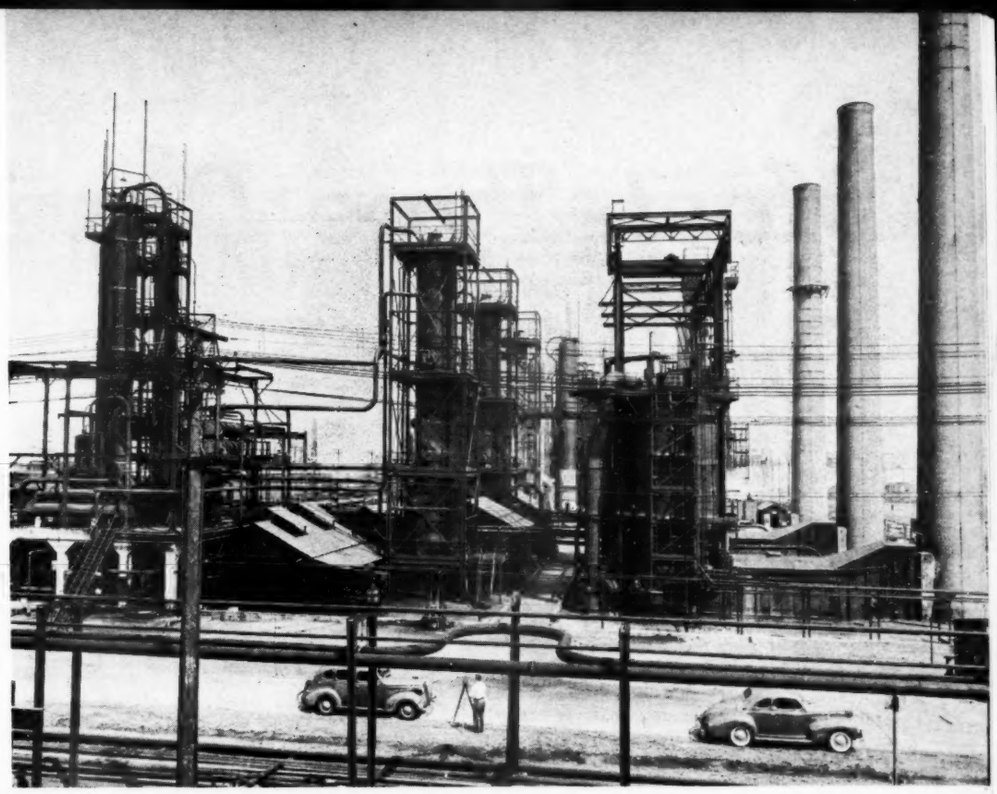
Buron Fitts, district attorney of Los Angeles County, whose recent investigations qualify him so well, took as his subject "Fifth Column in the Oil Industry."

P. H. Jones, research supervisor for the Union Oil Co. at Wilmington, presented the results of his exhaustive research on the "Factors Influencing Bond Between Cement and Formation."

In addition a motion picture of the story of "Aluminum From Mine to Metals" was shown through the courtesy of Security Engineering.

Speakers Named for I.I.P.A. Program in Indianapolis

The Indiana Independent Petroleum Association will hold its fall convention at Indianapolis, Ind., at Hotel Severin, October 9 and 10. Among the speakers will be Samuel B. Pettingill, former congressman; Ralph W. Carney, sales manager for Coleman Lamp & Stove Co.; N. Bond Hedden, Ethyl Gasoline Corp.; R. A. Ludlow, director of A.P.I., and Homer L. Chaillaux, director, National Americanism Commission of the American Legion, Indianapolis.



With refiners now obtaining an average yield of about 44 per cent of cracked and straightrun gasoline from each barrel of crude processed, new refining processes continue to be brought forward that produce larger yields of high-octane gasoline. Here is shown a two-coil combination crude polyform unit at Gulf Oil Corp.'s Girard Point, Pa., refinery. A discussion of this process is given in this issue, beginning on Page 52

ENGINEERING & OPERATION

In This Section

SEPTEMBER 12, 1940

MAST-TYPE DERRICK USED ON DEEP COASTAL WILDCAT
By Neil Williams ..... Page 46

Hamman Oil & Refining Co. recently drilled a 9,200-ft. wildcat in coastal Louisiana using a rotary rig with a 129-ft. cantilever-type mast. Intended primarily for exploratory drilling, the rig is designed to facilitate moving, and speed up drilling and setting up or dismantling.

ORDINARY 110-VOLT CIRCUIT INDICATES WHEN TANK IS FULL
By W. T. Ziegenhain ..... Page 48

At Sinclair Refining Co.'s Fort Worth, Tex., plant two light circuits are used to indicate when a water tank is full, thereby eliminating troubles encountered when only one bulb is used.

RACK FOR CASING AND PIPE MADE FROM JUNK TUBULAR MATERIAL
By Harry F. Simons ..... Page 50

One operator in Illinois has developed a pipe rack that has the advantage of being easily assembled or dismantled, and of being compact and easy to transport.

GULF PLANTS PRODUCE HIGH GASOLINE YIELD BY POLYFORM PROCESS
By Povl Ostergaard and Dr. Eugene R. Smoley ..... Page 52

The process division of the Gulf Oil Corp. recently developed the "polyform process" of refining in which oil is subjected to higher temperatures and higher degrees of conversion per pass than is normally obtained. The process results in large yields of high-octane gasoline.

SMALL GENERATING PLANT SUPPLIES PUMPING POWER IN ILLINOIS POOL
By Harry F. Simons ..... Page 65

SAFETY: Guard Around Pumping Unit on Filling-Station Plot ..... Page 48

OPERATING IDEAS ..... Page 49

SUGGESTED FIELD PRACTICES, No. 12—By T. P. Sanders ..... Page 66

QUESTIONS ON TECHNOLOGY—By W. L. Nelson ..... Page 67

Mast-Type Derrick Used On Deep Coastal Test

By NEIL WILLIAMS

At a wildcat drilled in coastal Louisiana a 129-ft. cantilever-type mast and specially designed substructure were used. Capacity of the mast is rated at 10,000 ft. and is the largest ever built. In keeping with rigs used for slim-hole exploratory drilling, it is designed to speed and facilitate moving, drilling and setting up or dismantling.

APPLICATION of a mast-type derrick to deep drilling has been made on a wildcat test drilled by Hamman Oil & Refining Co. near Vinton, in Calcasieu Parish, coastal Louisiana. With the mast, the test, started the middle of July, was drilled below 9,200 ft., where it was quit late in August as a dry hole. Capacity of the mast was rated, however, at more than 10,000 ft.

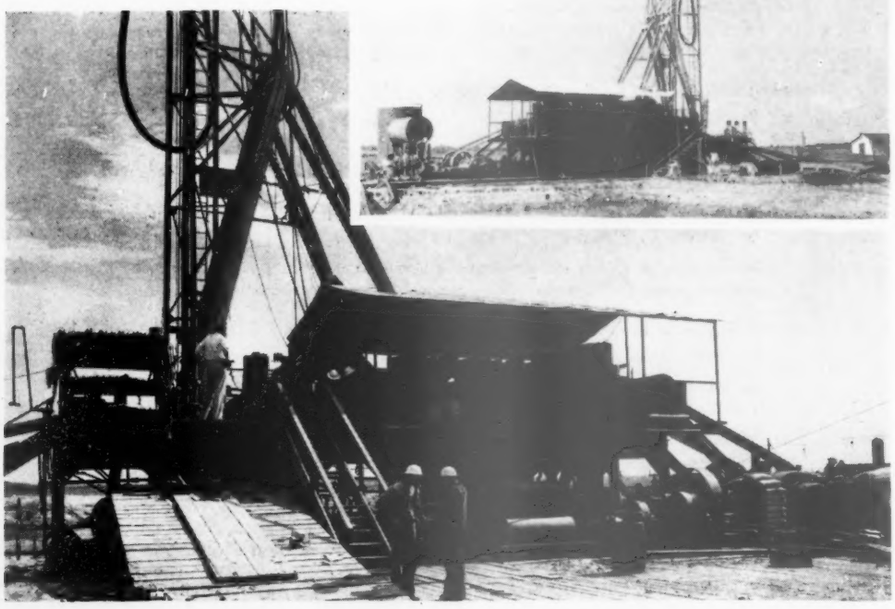
The mast, which is of the "jack knife" cantilever type designed by Lee C. Moore & Co., is 129 ft. high, the first of that size and the largest ever built. Previously, the largest mast of this type has been the 87-ft. size designed for drilling depths to 5,500 ft. It also is the first of its type set on a substructure.

A specially designed substructure incorporating features of portability was provided. This, however, is of full 8-ft. height permitting installation of standard blowout preventers and well-control assemblies below the derrick floor. Combining engine foundations with the substructure as a single unit, it is 45½ ft. long, exclusive of pump base with an overall width of 18 ft., 2 in.

Tubular Construction Used

Except size, the only essential difference between this large mast and its smaller counterparts, is in its tubular construction, which gives it greater comparative strength than the angle-iron construction of the smaller masts. Rated load capacity is 400,000 lb. as compared with the 300,000-lb. capacity of the 87-ft. masts. Leg sections are of 5½-in. o.d.

Diesel-powered mechanical rig was used in the drilling of this test. Three 250-hp. diesel engines provided power for the draw works, rotary, and pumps. A large draw works comprises the hoisting equipment, and there are two 18-in. mud pumps. These pumps, mounted on a specially designed steel base at ground level at the back of, and connected to, the substructure, are driven by V-belt drive from the engines set on the substructure. The engines are so synchronized that any or all three can be operated either for pump operation or hoisting. A 20-in. rotary is being used.



Right: General view of the diesel rig, equipped with a 129-ft. cantilever mast-type derrick, used by Hamman Oil & Refining Co. to drill a 9,200-ft. wildcat test near Vinton, Calcasieu Parish, coastal Louisiana. Below: Closeup of the A-frame supporting mast-type derrick and combined drilling-engine foundation and substructure

Designed for Exploratory Drilling

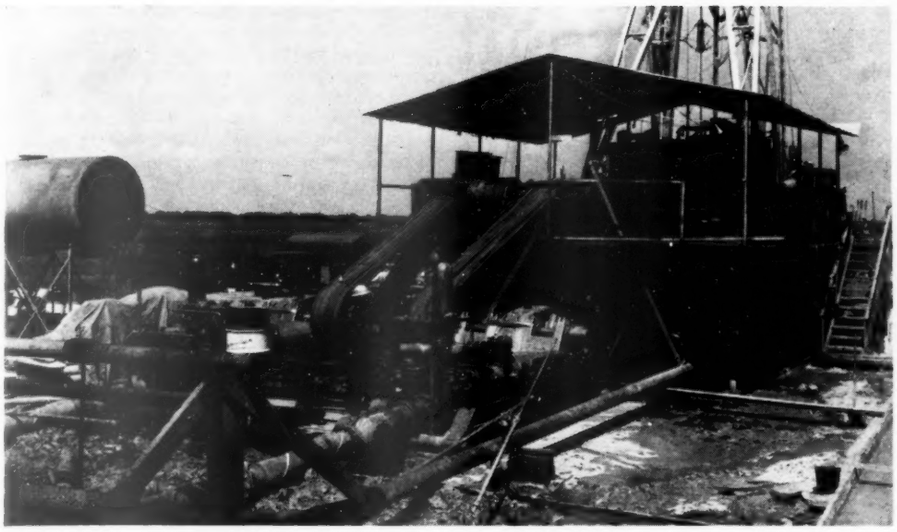
Intended primarily for slim-hole exploratory drilling in which it is designed to speed and facilitate moving, drilling, and setting up, the large mast, like its smaller counterparts, is constructed in sectional units, of which there are six excluding the base. For transportation, each section comes well within any road requirement, both as to dimension and weight. For erection, the mast is assembled horizontally on the ground, and then raised as a single unit to upright position with the rig's draw works as the hoist. For dismantling and moving, the mast is lowered to horizontal position on the ground and the sections unbolted.

The top 23 ft. (approximate measurement) of the mast with the crown block, which is a permanent part of the mast, comprises one unit. Next is the upper intermediate unit, a 34-ft., 8-in. section of the mast that takes in the fourble platform, which for moving, is folded up against the section. The lower intermediate unit also is a 34-ft., 8-in. section, as are the two bottom sections. There are two pieces in the lower intermediate section, which is split longitudinally for highway clearance.

Division of the bottom part of the mast into two sections is made necessary by the width of the front side. The respective sections are easily and quickly joined by bolted insert-sleeve-type splices. The fifth and sixth sections comprise the A-frame support for the leg members, and this frame can be folded into transportable size with the base by removal of hinge-pin bolts which fasten them to their base shoes. Assembled, the front legs of the mast carrying the weight of the mast also are connected to the front ends of the base by hinge pins that are readily removable when the mast is in horizontal position. These pins serve as bearings for raising and lowering the mast in "jack knife" fashion.

In breaking down the mast into sections for moving, it is not necessary to remove the traveling block, which can be pulled up into the top section and there transported. When this is done, planks are laid across the braces as a floor for the block, which then can be secured with cable.

The mast has a width of 12 ft. across the base of the two front legs. Length of the A-frame support from the base of the mast's two front legs to the base of the back leg supports is 18 ft. The legs extend back over the draw works, which is



Mud-pump hookup showing V-belt drive from the three 250-hp. diesel engines to the two 18-in. mud pumps. The pumps are mounted on specially designed steel bases, joined to the base of the substructure by removable steel ribs

set up between with the mast in upright position, the back side of the mast rests against the front leg members of the A-frame support with the back leg members of the A-frame serving as a form of prop. The mast rests slightly off center to the rear. Height of the A-frame support from the base of the leg members is 26 ft., 5⅜ in.

Opening at the top of the mast is 3 ft., 8 in. by 4 ft., 4 in., into which is fitted the special crown block which comes as a fixture of the mast. The crown contains four 36-in. manganese steel sheaves mounted on a 5½-in. alloy steel hardened shaft on roller bearings, and one 30-in. sheave mounted on a 5½-in. shaft on roller bearings. This is complete with a crown safety platform with punched plate flooring.

The hinged-type fourble platform, fastened on the upper intermediate section of the mast, and which folds up against the section when the section is dismantled for moving, was designed to accommodate 10,000 ft. of 4½-in. drill pipe. It racks the pipe on the outside at the front of the mast.

In raising the mast, the drilling line is strung up as for drilling with the line to the draw works carried over a center sheave located on the gin pole of the A-frame support but is dead-ended on the base section of the mast by clamps provided for that purpose. With the hoisting sling line fastened to the top of the gin pole and then thrown over the drilling hook, the mast is pulled up, requiring just a few minutes' time. In position, the mast is bolted to the top of the A-frame support, and with hoisting sling tied back out of the way, it is ready for use.

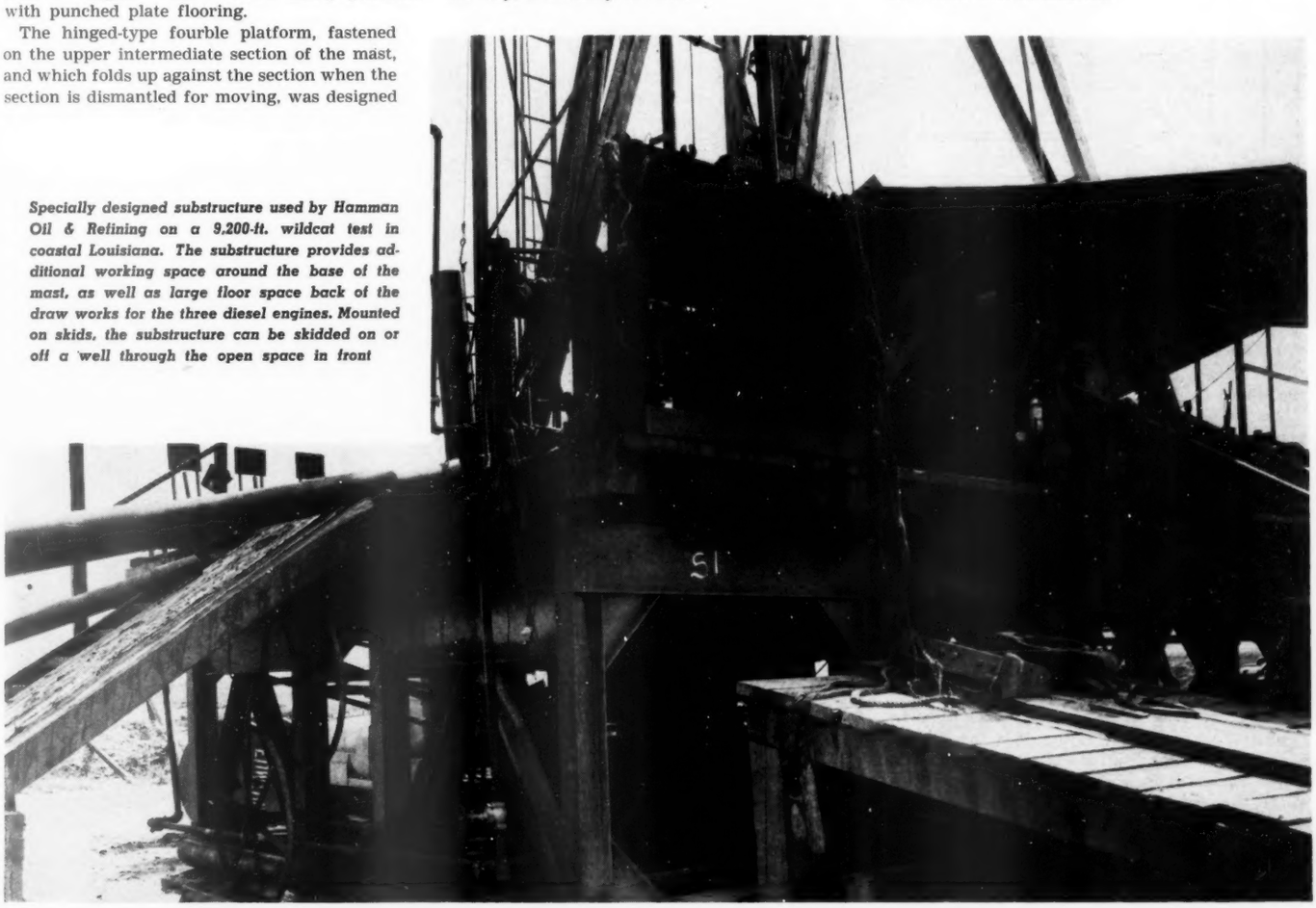
For lowering the procedure is reversed by backing down with the draw works. As the mast rests slightly off center to the back, the catline is used to pull the mast past center to the front.

Substructure Design

The large specially designed substructure provides additional derrick-floor working space around the base of the mast, as well as large floor space back of the draw works for the three diesel engines. It consists of four sectional units, two for each side. The sections of the two respective sides have a width of 7 ft., 1 in. These sides are assembled with a 4-ft. space running lengthwise between them, giving an overall width of slightly over 18 ft. On skids, the assembly of the substructure is such that by the removal of front connecting cross members, the structure can be skidded on or off a well as a single unit. The pump-base skids at the rear of the substructure are joined to the base of the substructure by removable steel ribs. The latter are adjustable for spacing the pumps.

The well drilled 9⅞-in. open hole from 1,435 ft., where 10¾-in. surface casing was cemented. More than 800 ft. of cores were taken, all with a conventional core barrel. Considering the time required for conventional coring, the test was carried to its total depth in unusually good time. However, after the crews became accustomed to the mast, round trips were made in as short time as 1 hour and 50 minutes.

Specially designed substructure used by Hamman Oil & Refining on a 9,200-ft. wildcat test in coastal Louisiana. The substructure provides additional working space around the base of the mast, as well as large floor space back of the draw works for the three diesel engines. Mounted on skids, the substructure can be skidded on or off a well through the open space in front

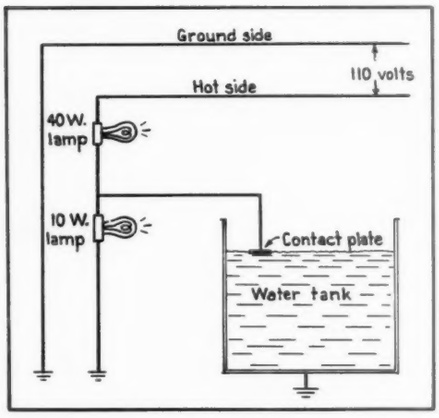


Ordinary 110-Volt Circuit Shows When Tank Is Full

By W. T. ZIEGENHAIN

MANY types of level indicators are used among refiners to show the quantity of water in a tank or pond, but the Sinclair Refining Co. has solved its problems at the Fort Worth, Tex., plant in an unusually simple and economical manner.

The old conventional method of indicating a full tank by means of an electric circuit and electric-light bulb can get one into considerable trouble in that in case of a power failure or a burned-out bulb, there is a possibility of filling the tank without the light coming on when the tank is full, or at the proper level. With two light circuits, as described herein, it is readily apparent when the tank is full or when a light bulb is burned out. This system involves the use of two lamps, one a 40-watt and one a 10-watt bulb. The 10-watt bulb burns when



the tank is not full. The 10-watt bulb goes out and the 40-watt bulb burns when the tank is full. If neither bulb is burning it immediately shows there is trouble with the electric circuit.

The accompanying wire diagram shows the essential equipment. It becomes reading apparent that use is made of the difference in resistance between two light circuits to indicate whether the tank is full. The one circuit contains a 40-watt bulb while the other contains a 10-watt bulb.

The principle outlined here is used in several plant installations, but for the sake of clarity the one in which a distant, elevated water tank is involved, will be taken as an example. In this tank a 4-in. copper disk is suspended from a grounded position overhead. The level of the disk is predetermined by the desired level of the water in the tank. Copper was chosen as the metal for the disk as it has proved to resist corrosion, makes a better contact with the water and is convenient to cut and connect. This disk acts as the contact for completing one electric circuit and in effect this circuit reduces the resistance to the flow of electricity through the 40-watt lamp.

When the tank contains less water than is needed to make contact at the disk, the flow of electricity through the 40-watt and the 10-watt lamps connected in series is relatively small because of the combined resistance of the two lamps. When the tank is full of water and contact is made between the disk and the water, electricity flows through the disk, and ground. This completes the second circuit through the 40-watt lamp.

Sufficient salts are dissolved in the water to conduct the electricity, yet the water has no more than normal hardness. Therefore, the principle of this installation could be used in most any refinery water-storage tank or pond.

Grounding the tank or pond well is essential if there is no natural ground already supplied. Obviously, it is necessary to make a good contact with the ground because the success of the operation depends upon more electricity passing through the 40-watt bulb when the tank is full than when only partially filled. The added quantity of electricity flowing through the bulb after contact is made in the tank causes the 40-watt lamp to burn.

Use of two lamps connected in series also provides a check on the operation of the system. One lamp is lighted all of the time, regardless of the water level in the tank. If this is not occurring, the operator knows the power is off the system and he should not depend upon the lights to tell him whether the tank is full. Two lamps, therefore, serve as a safety feature. Also care should be taken to be consistent in making good ground connections at the transformer, lights and tank. Then it is an easy matter to run the hot lines to the lights and to the tank disk and complete the split circuit.

Determining Gas-Line Capacities

A difficult mathematical problem frequently encountered by field engineers working on repressuring, gas lift, or gas-producing properties is the determination of capacities of gas pipe lines. Recently a large oil company compiled complete tables which make it possible to determine the gas-carrying capacity of any pipe line in a few minutes merely by selecting three factors from the tables and multiplying them together. Factors in the tables were calculated from the Weymouth formula, and require, together with instructions, eight pages in the Producing Equipment Directory; Pages O-31 to O-38.

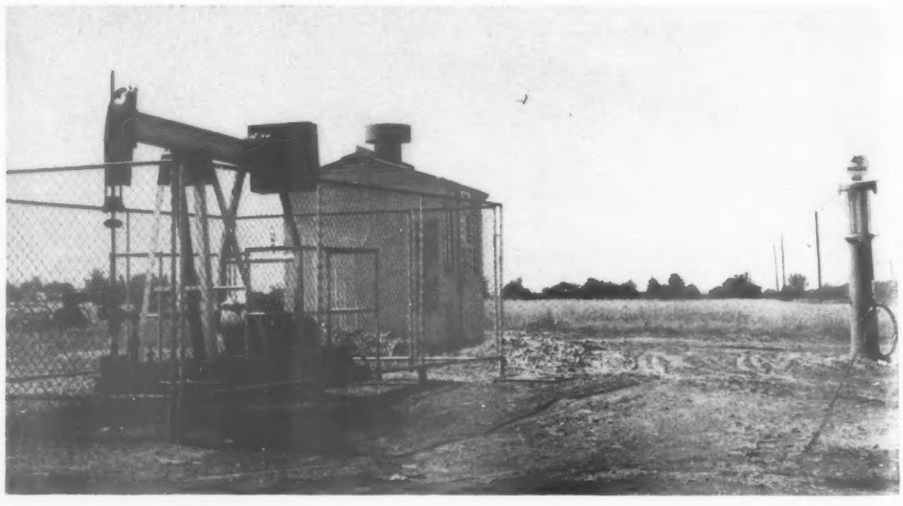
SAFETY — Guard Around Pumping Unit on Filling-Station Plot

FROM well to filling-station pump, the oil business is fraught with danger but great effort is made to keep the accident rate as low as possible in all branches of the industry. The accompanying photograph shows one method of preventing accidents to workmen and visitors at the well.

Everyone who visits a filling station which has a pumping unit close by is naturally attracted by the machinery in operation. As people frequently forget how dangerous moving machinery can be, the only safe procedure is to guard the pumping unit so no one can get near it.

This particular pumping unit is double guarded with a heavy wire fence enclosing it and guards made from old pipe enclosing the crank and counterbalance. In case the fence has been removed so work can be performed on the well or on the pumping unit, the inner guard will be in place. This prevents any car from backing into the moving beam or any workman from absent-mindedly walking into it while servicing the unit or power.

There is little excuse for leaving the fence out of place as it is designed so it can be removed in a few minutes and replaced in the same length of time. Instead of having the posts set into the ground, the fence is built in sections and a piece of 2-in. pipe driven into the ground at the proper place to accommodate each post on the frame. Two men can remove and replace the sections in a very few minutes.



Operating Ideas

Rack for Wire-Line Reel

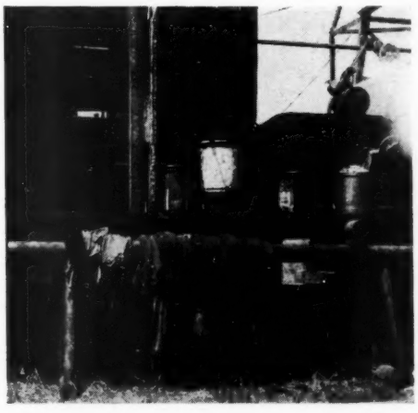
Crews for one Kansas cable-tool contractor do not need to build a rack each time they want to install a new wire line on the bull wheels as a set of skids provided for this purpose will accommodate any size reel. The skids are made from 6 by 8-in. timbers with legs and braces made from 2-in. pipe; the legs on one end are longer than they are on the other, thus forming an incline. The bottom of the legs are set on boards to keep them from settling into the ground.

Swing Regulates Water Level in Gun Barrel

A swing on the water-discharge line from a gun-barrel tank makes regulation of the water level in the gun barrel easy, as moving the discharge end of pipe along the ground automatically raises or lowers the swing connection just back of the valve on the tank. This prevents oil from flowing over into the ditch. In case the water level gets too low, the 2-in. valve may be closed.

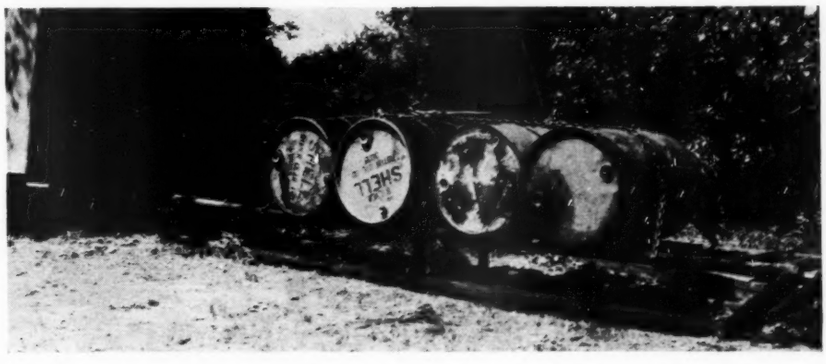
Small Tubing Used in Gas Well to Control Water

Many gas wells produce a small amount of salt water with the gas. If this water is allowed to accumulate in the well, the gas is soon drowned out and swabbing is necessary to reestablish production. The most convenient way to overcome this difficulty is to install small-diameter pipe in the well so that the velocity of the gas, as it rises to the surface, will be sufficient to carry the water with it. The picture shows a gas well producing from two sands. The 1300-ft. sand produces through a ½-in. string of pipe inside of a 2-in. string, while the 900-ft. sand produces through a ¾-in. string which was run beside the 2-in. and which terminates between two wall packers.



Use Pipe Trestles for Engine Platform

Instead of using 2 by 12-in. timbers for floor supports and buying new boards each location, one contractor operating in Illinois uses a set of steel trestles. These are set along the outer edge of the floor and a 4-in. pipe long enough to reach the engine skids place on top of them. The floor is then laid directly on these steel stringers. Blocks of wood are used to keep the pipe from rolling.



Rack Used for Carrying Oil Drums While Moving

Most oil-drum racks cannot be used as a skid for moving the oil from location to location as they are built for the single purpose of supporting the drums while the rig is in operation. One Kansas contractor builds his racks from 3-in. and 2-in. pipe and braces them solidly. It is then possible to hold the drums on the skids with a chain and boomer while moving. Only one piece of equipment needs to be handled instead of five. The drums are in position to be used as soon as the rack arrives at the new location.

Rack for Casing and Pipe Made From Junk Tubular Material

By HARRY F. SIMONS

THE tendency for increased portability has not only affected the major items of drilling equipment such as hoists, pumps, auxiliaries, etc., but has also influenced the design of pipe and casing racks, suction racks, buildings, and other incidental equipment. This becomes increasingly important where the drilling contractor accepts the job on a turn-key basis and must furnish the derrick and pits.

The normal life of drill pipe is highly variable, ranging from 30,000 to 200,000 ft. in extreme cases. However, when pipe is retired from service it is far from being useless and in many cases it is converted into line pipe by cutting off the upsets. It also can be used in constructing various pieces of equipment such as skids, racks, fourble boards and a number of other items.

There are many types of pipe racks made from old tubular goods now in use. Some contractors favor a set of two trusses made from old drill pipe. These are made by welding four or five risers on a joint of 6⅝-in. or 5⅝-in drill pipe and then laying another joint on top of the risers and welding it in place. The two trusses can then be put in place and crossbraced by two joints of 2-in. pipe across each end in a manner similar to the construction of a regular wooden pipe rack.

As the ground conditions on each location are different, methods of adjusting the height of the pipe rack to suit the elevation of the walk must be provided. In case the rack is too high, trenches may be dug and the trusses sunk in the ground. If the walk is too high, the trusses may be elevated by blocking or cribbing or by designing the trusses so they are adjustable.

By using two differing sizes of pipe for the risers on the trusses and then inserting one in the other with drilled or burned holes in each, the rack may be raised or lowered at will. Each truss is then built in two sections, one of them from 6⅝-in. pipe with 6⅝-in. risers and the other from the same size pipe with 5⅝-in. risers. Or 4½-in. may be used inside 5⅝ and 3½-in. can be used inside 4½-in. provided the weight to be placed on the rack is not too great.

Following is the internal and external diameters of pipe as shown by The Drilling Equipment Directory:

Size o.d. (in.)—	Size i.d. (in.)	Weight per ft. (lb.)
3½	3.063	8.500
3½	2.900	11.200
3½	2.764	13.300
4½	4.00	12.750
4½	3.958	13.750
4½	3.826	16.600
5.563	4.975	19.000
5.563	4.859	22.200
5.563	4.733	25.250
6⅝	6.065	22.200
6⅝	5.965	25.200
6⅝	5.761	31.900

Main objection to this type rack is the bulk which makes it inconvenient to transport. The accompanying photographs show a pipe rack developed in Illinois, originally for use in a yard, but converted to use on the drilling rig. It has the advantage of being easily assembled or disassembled and being compact and easy to transport, and is made entirely from junk 4½-in. drill pipe.

Instead of using trusses, the risers are built on pedestals and the joint of pipe for the stringer is simply laid on and bolted to them. Five pedestals resting on board foundations are provided for each stringer on the rack, three of them having their bases normal to the stringer and two of them having their bases parallel to the stringer. This prevents any end or side movement. Each side member of the pipe rack is thus a separate unit and will stand alone. For the usual pipe having a length of approximately 30 ft., the two side members are placed about 20 ft. apart, thus allowing about 5-ft. hangover on each end. This is not enough to cause distortion of the pipe while it is on the rack.

The rack can be made in the yard or at the location by simply cutting up old drill pipe and welding two different types of pedestals. Base member of the pedestal is about 4 ft. in length, while the upright is about 2½ ft. high. The cradle in which the stringer rests is about 2 ft. in length and is bent slightly to allow the stringer to rest on it. Holes drilled through the cradle and pipe are made for the bolts which prevent the stringer from moving around. Two-inch rough timber can be bolted to the top of the stringers.

The rack as shown in the pictures is suitable for storage of pipe in a yard, but for use with a drilling rig it must be made adjustable. This is accomplished by replacing the solid upright with a telescopic upright made from two differing sizes of pipe with a number of holes in both the inner and outer members. This type pedestal can be quickly adjusted and no digging out or blocking up is necessary.

Below: Pipe rack made from old 4½-in. drill pipe on which good drill pipe is stored. Below, right: Photo of one member of rack showing details of construction. Note firm footing provided by boards

Left: Pedestals ready for use after being made by welder. The cradles on some are parallel to the bases while on others the cradles are at right angles to the bases

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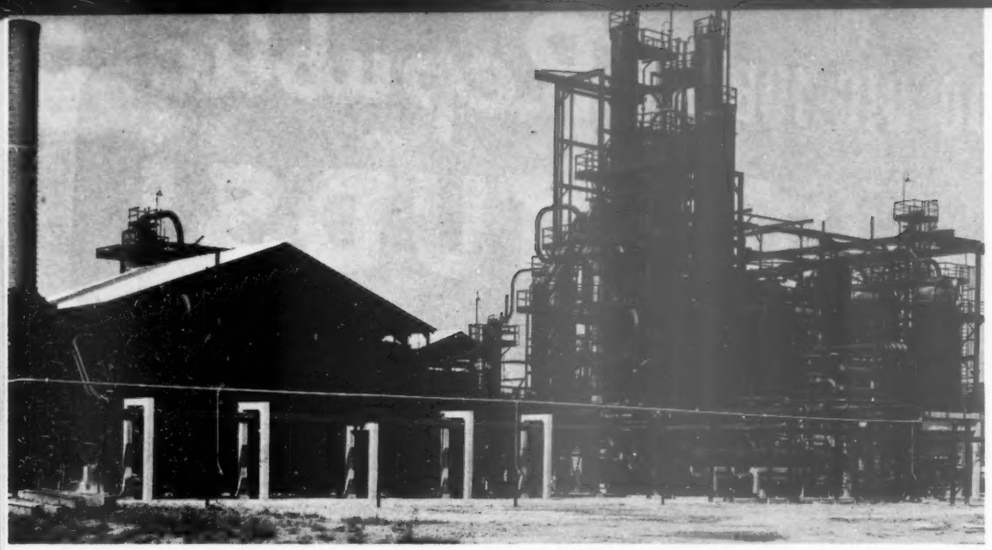

Naphtha polyform unit at the Cincinnati, Ohio, refinery of Gulf Oil Corp. The unit is one of five now in operation

Gulf Plants Produce High Gasoline Yield By Polyform Process

By POVL OSTERGAARD and DR. EUGENE R. SMOLEY
Gulf Oil Corp. Lummus Co.

THE ever-increasing demand for more gasoline, and for higher octane number, has made it necessary for the oil industry to explore all possibilities for increasing the yield of gasoline from the crude from existing installations, and improving the yield and the quality of gasoline by new refining methods.

One of the outstanding recent accomplishments in the refining industry is the development of the "polyform process" by the process division of the engineering, construction and process department of the Gulf Oil Corp. The "polyform process" differs from the ordinary thermal cracking process in that the oil is processed in admixture with varying amounts of normally gaseous hydrocarbons, particularly propanes and butanes, and in that the oil is subjected, in such admixture, to higher temperatures and higher degrees of conversion per pass than would be possible under otherwise similar conditions, without excessive coke formation in the cracking tubes. The process results in greater yields of higher octane gasoline than can be obtained by subjecting the same oil to a conventional thermal cracking operation.

The process has been used in large-scale operation in the plants of the Gulf Oil Corp. for over 4 years with routine refinery runs of 1,500 to 2,500 hours on stream. At present there are five polyform units in regular refinery operation with oil-charge capacities ranging from 1,500 to 22,000 bbl. per day. The Lummus Co. is at present engaged in the construction of two large naphtha polyform units for the production of 10,000 bbl. and 4,000 bbl. per operating day of 76 to 77-octane-number gasoline (C.F.R.-A.S.T.M.) from heavy naphtha and outside propanes and butanes. The larger unit is purchased by a major oil company on the Gulf Coast and the other unit is for the Gulf Oil Corp.

With the present trend for higher-octane gasoline requirements, the polyform process is of real interest to the refining industry as it offers an economical means of increasing yield and raising the octane number of gasoline from any refinery and any type of charging stock. It is possible to convert 20 to 30-octane-number naphtha stock (C.F.R.-A.S.T.M.), with a boiling range of 250° F. to 450° F. to 76 to 82-octane-number gasoline (C.F.R.-A.S.T.M.) with high yields. From a whole crude, such as Mid-Continent, East Texas, or West Texas, it is possible to obtain 3 to 4 per cent higher overall gasoline yield of 72 to 74-octane number (C.F.R.-A.S.T.M.). The fuel gas produced varies from 0.70 to 0.85 specific gravity, free of butanes and containing only 2 to 15 per cent propanes. Polyform gasolines have high-octane numbers with road octane appreciation of from three to eight numbers, appreciation from C.F.R.-A.S.T.M. octane to research octane of 9 to 14 numbers, high-blending values, excellent distillation characteristics, and good lead susceptibility.

The polyform distillate offers no additional treating problems. Clay treating and sweetening, or acid treating, rerunning, and sweetening, depending upon sulfur content, are conventional. A small amount of gum inhibitor is added for gum stability.

By a modified operation the naphtha polyform process can be conducted to yield a distillate of approximately 80 to 84-octane number (C.F.R.-A.S.T.M.). This distillate has a very high aromatic content of from 20 to 35 per cent, which is predominantly toluenes and xylenes. By cold acid treating and rerunning, this high-octane polyform distillate can be processed to yield approximately 40 per cent 77 to 79-octane (C.F.R.-A.S.T.M.) aviation gasoline of satisfactory boiling range, acid heat, and stability, which will lead up to 90 C.F.R.-A.S.T.M. octane number with less than 3 cc. TEL. Besides the aviation-gasoline cut, a 35 per cent cut of aviation-gasoline safety fuel with an octane number of 80 C.F.R.-A.S.T.M. can be produced with properties as indicated later in the text. The balance of 25 per cent is treating and polymer loss.

While the development of the process represents a distinct departure from prior practice, polyform units are simple in design, and offer no greater operating problems than conventional thermal cracking units, as the plant equipment consists of pumps, heaters, fractionating towers, heat exchangers, etc., with all of which any cracking-coil operator is thoroughly familiar. The instrumentation of these units allows complete automatic control of oil levels, pressures, temperatures, flow rates, etc., leaving to the operators supervision and fine adjustments for optimum results. Investment costs and utility requirements are only slightly higher than for conventional cracking units. The slightly higher costs are due tc higher operating temperatures and pressures used in polyform operations

Polyform Theory

All oil-cracking operations represent compromise between yield and product quality. More drastic cracking of relatively heavy stocks tends to result in higher yields of gasoline while more drastic cracking of light stocks, such as naphtha, tends to reduce the yield of gasoline. It is known that the octane number of gasoline rises with the degree of conversion per pass, and that the reaction velocity of cracking rises sharply with temperature. More intense cracking ordinarily tends to increase the yield of normally gaseous hydrocarbons.

Inasmuch as the octane number or antiknock value of the final cracked gasoline from any given stock is largely a function of the degree of conversion per pass, it is of course desirable to operate at as high a degree of conversion per pass as possible, providing the yield and quality in other respects of the gasoline product are satisfactory.

The yields and octane numbers which can be secured from any given cracking stock depend naturally, to some extent, on the design of the still, but for any stock there is a definite "crack per pass" which cannot be exceeded without seri-

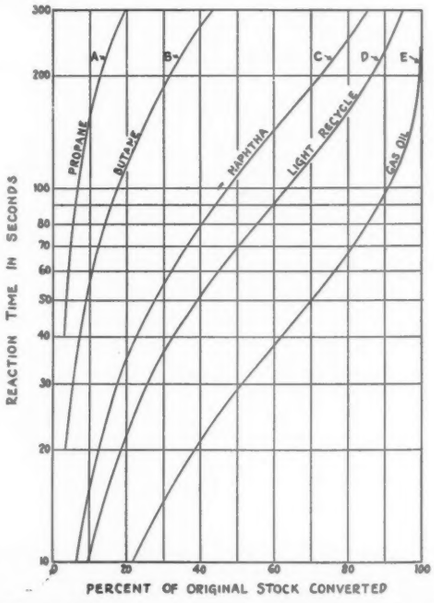

Fig. 1—Relative cracking rates of different stocks at 1,020° F.

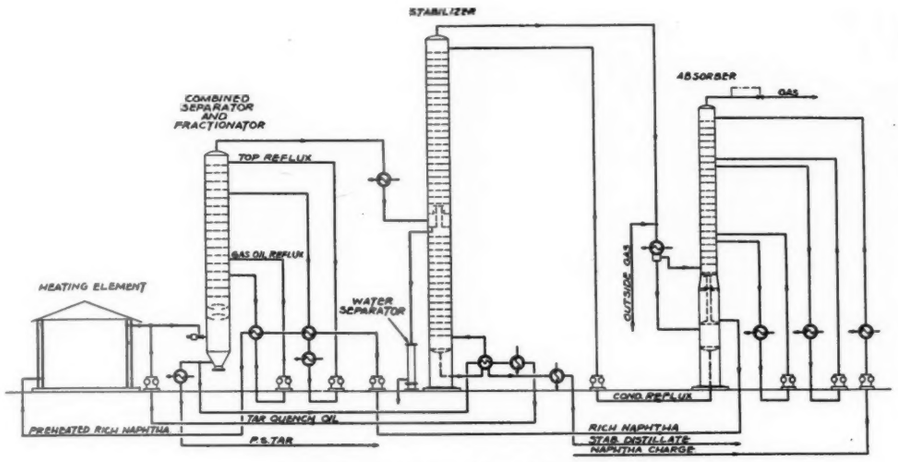

Fig. 2—Flow sheet—naphtha polyform unit

ous deposition of coke in the cracking coil, as any pressure-still operator knows. The ordinary thermal cracking process, therefore, has definite limitations in magnitude of yields and octane numbers obtainable.

Any process by which the "crack per pass" can be increased means higher octanes and greater yields of light products. The gasoline yield can be further increased by converting part of the gases produced to gasoline hydrocarbons. The polyform process does exactly this.

Gaseous hydrocarbons, such as C_3 and C_4 hydrocarbons, are introduced to the polyforming coils with oils for two purposes:

1. In order to effect a higher degree of conversion of the oil when diluted with C_3 and C_4 hydrocarbons than is possible when this oil is cracked by itself.

2. For the purpose of simultaneous cracking of the oil to a higher degree of conversion than is possible when the oil is cracked by itself, and at the same time to effect a certain amount of cracking with subsequent polymerization and other side reactions of the C_3 and C_4 hydrocarbons and oils.

Conversion of Gaseous Hydrocarbons

While it is true that there will always be a small amount of cracking of the C_3 and C_4 hydrocarbons in any case, the conversion per pass of these components at temperatures below 950° F. is so small that it may be said that the simultaneous cracking of the oil and polymerization of the C_3 and C_4 hydrocarbons can only be practically effected with oils which can be cracked at temperatures above 950° F. For oils which cannot be cracked at these high temperatures the C_3 and C_4 hydrocarbons are primarily introduced in order to increase the "crack per pass" of the oil, and permit other side reactions. That favorable side reactions take place when polyforming heavier oils is substantiated by the very large volume increase of products over charge, which is of the order of two to three times the volume increase encountered in thermal cracking.

With respect to heavy oils such as reduced crudes, heavy recycle oils, etc., there is a definite minimum percentage of C_3 and C_4 hydrocarbons in the total furnace feed which should be maintained in order to make possible the increase of the "crack per pass" of the oil. The minimum quantity of C_3 and C_4 hydrocarbons in the furnace feed is indicated to be related to the critical temperature of the furnace feed. It has been found that when cracking a mixture of an oil and C_3 and C_4 hydrocarbons at temperatures lower than the critical temperature corresponding to the mixture of the oil and the C_3 and C_4 hydrocarbons this oil cannot be subjected to more severe cracking conditions than if the oil were cracked alone. This is attributed to the following:

When the temperature of an oil in a cracking tube is below the critical temperature of the oil and above its critical pressure there always exists a vapor phase and a liquid phase in the tube. The liquid phase is suspended in the vapor phase as minute oil particles which, due to the turbulence in the tube, are thrown out against the tube walls covering this with a thin oil film composed of the heavier components of the oil.

As the heat transmitted through the tube wall to the mixture of vapor and oil in the tube has to be transmitted through the oil film, the coking characteristics for this mixture are determined by the coking characteristics for the oil film in the tube. As long as this oil film exists gas dilution of the oil will make it impossible to crack the oil to a more severe degree than if the oil were there by itself. However, as the percentage of C_3 and C_4 hydrocarbons in the furnace feed is increased we finally reach the point where the critical temperature of this mixture is equal to the temperature at which the oil can be cracked by itself. At this point only one phase exists, namely, a vapor phase. The oil vapors and the C_3 and C_4 hydrocarbon vapors will hence form a perfect solution and the film on the tube wall will be of the same composition as the composition of the main body of hydrocarbon vapors passing through the tube.

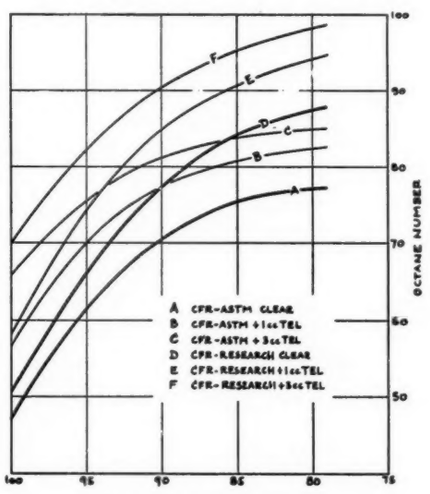

Fig. 3—Yield-octane relationship from eastern Venezuela naphtha polyforming

Before the right percentages of dilution are reached there is no benefit in cracking the heavier oils in a dilution of normal gaseous hydrocarbons.

From the above discussion it is evident that there exists an absolute minimum limit for C_3 and C_4 hydrocarbon dilution of a heavy oil in order to effect an increase in the cracking conditions to which this oil can be subjected. On the other hand, there is also a maximum limit for the dilution of any oil with C_3 and C_4 hydrocarbons, in this case determined from the cracking, polymerization, and other side reactions of the C_3 and C_4 hydrocarbons recycled with the oil.

Relative Conversions

Fig. 1 indicates a plot showing the relative percentage of conversion of propane, butane, virgin straightrun Mid-Continent naphtha and light recycle gas-oil when cracked at a temperature of 1,020° F. and a pressure of 1,000 sq. in. at different soaking times, expressed in seconds. The temperature of 1,020° F. was arbitrarily selected to permit a comparison of these stocks. For naphtha polyforming, 1,030° F. to 1,130° F. is generally used.

From an inspection of Fig. 1 it will be seen that by subjecting propane and butane and the straightrun naphtha to the same cracking conditions of 1,020° F. and 1,000-lb. pressure simultaneously with a soaking time of 150 seconds, the naphtha will be subjected to a conversion per pass of 60 per cent while the butane at the same time will be subjected to a conversion per pass of 25 per cent and the propane to a conversion per pass of 10 per cent. If it is desired to reform the naphtha and at the same time crack and polymerize the C_3 and C_4 hydrocarbons, it is evident that it will be necessary to maintain a cycle ratio of butane circulating through the heating element to fresh butane introduced to or formed in the system of 4 : 1, and a cycle ratio of the propanes charged to the furnace over fresh propane introduced to or formed in the system of 10 : 1.

Likewise, if a less refractory oil as, for instance, virgin gas-oil or light recycle stock, is to be cracked, and it is desired at the same time to crack and polymerize C_3 and C_4 hydrocarbons in the same coil it will be seen from Fig. 1 that this will call for higher cycle ratios for the C_3 and C_4 hydrocarbons than if these gases are cracked in the presence

TABLE 1—COMPARISON OF CRACK PER PASS (400 E.P. GASOLINE BY VOLUME) POLYFORM VS. CONVENTIONAL THERMAL CRACKING

Properties—	Venezuela reduced crude	Mid-Continent P.S. stock	Venezuela recycle stock	Mid-Continent naphtha
Gravity, °A.P.I.	19.3	26.0	27.1	50.0
Assay distillation:				
Over point, °F.	238	265	250	270
10 per cent at	496	451	424	382
50 per cent	715	626	522	336
90 per cent	1,015	.....	664	378
Mol weight	284	270	201	125
Characterization factor	11.0	11.5	11.1	11.8
Vol. per cent liq. gas C_3 and C_4	None 25	None 53.8	None 44.2	None 49.2
Cracking temp., °F.	840 890	900 985	950 1,000	1,000 1,030
Pressure, lb./sq. in. gage	500 600	200 750	500 1,000	1,100 1,100
Max. per cent gasoline/pass	9.0 15.0	18.0 41.3	16.3 30.5	70.1 77.2
Octane No. gasoline	64.0 68.0	65.0 70.0	72.0 78.0	71.7 75.1

This data from commercial units with 2,000-hour average length runs.

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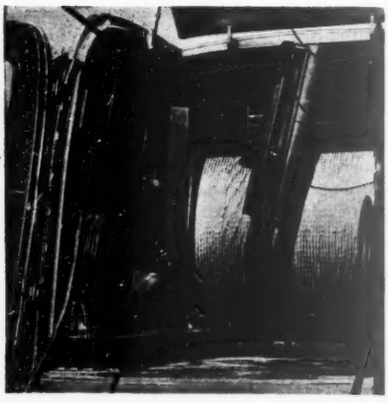

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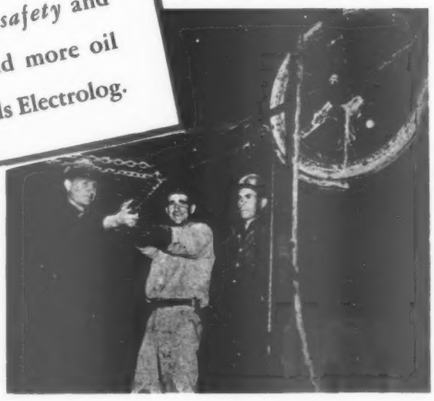

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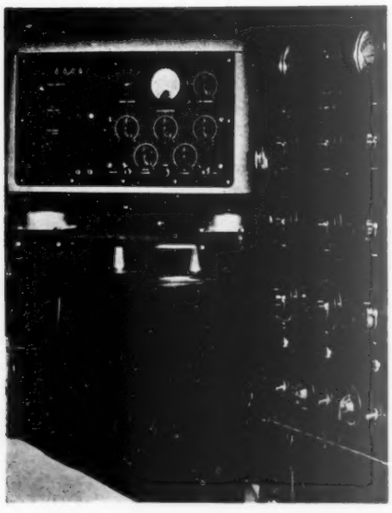
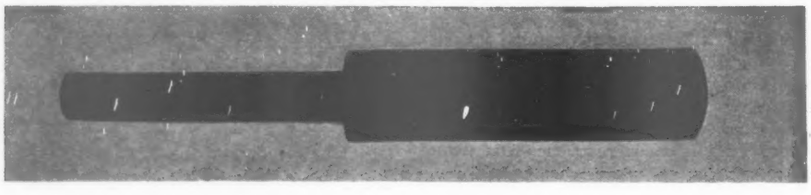


Recording of electrode depths is automatic. Controls are set before a run to eliminate any "chance of error from the human element."



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of straightrun naphtha. For instance, a light recycle stock like the oil represented by curve *D* on Fig. 1 can only be cracked to a conversion per pass of approximately 45 per cent in C_3 and C_4 dilution without running into coking troubles.

Cracking this oil to 45 per cent "crack per pass" at 1,020° F. at 1,000 lb. per sq. in. will call for a soaking time of 60 seconds. At the same time the butane will be subjected to a conversion per pass of 10 per cent and the propane to a conversion per pass of 4 per cent, calling for cycle ratios between butane charged through the heating element and fresh butane introduced to or formed in the system of 10 : 1 and the corresponding cycle ratio for the propane of 25 : 1. These ratios may seem high, but are counterbalanced by the fact that heavier oils, when cracked, produce smaller percentages of total gas and hence also of C_3 and C_4 hydrocarbons than do naphthas, and the right recycle ratio of C_3 and C_4 hydrocarbons to oil-furnace feed is usually obtained when the proper dilution for increased crack per pass is maintained.

From the foregoing it may be calculated that an upper limit for the amount of C_3 and C_4 hydrocarbons which should be cycled through the heating coil with a certain oil when it is desired to completely crack and polymerize the C_3 and C_4 hydrocarbons can be exactly determined when the cracking characteristics of the oil are known and the amounts of C_3 and C_4 hydrocarbons charged to the system, or formed in the system, are known.

If there is introduced to the system not only an oil feed, but also a certain amount of C_3 and C_4 hydrocarbons from the outside and the conversion characteristics of the oil are known, it is easy to compute the cycle ratio which must be maintained for completely converting the C_3 and C_4 hydrocarbons introduced to the system from an outside source.

Generally speaking, the gasoline produced per pass for oils above heavy-naphtha boiling range may be increased from 1.5 to 2 times the "crack per pass" obtained in an ordinary thermal cracking unit by employing the polyform principle.

The tabulation in Table 1 shows a comparison between conversion per pass with ordinary thermal cracking and with the polyform process.

TABLE 2—YIELDS AND PRODUCTS FROM NAPHTHA POLYFORM OPERATION WITH AND WITHOUT OUTSIDE GAS CHARGE

	Naphtha polyforming			Naphtha polyforming with outside gas feed	
				Charging	
Yield data—Volume per cent of naphtha—	Eastern Venezuela naphtha 18.6-28.5% on crude	West Texas straightrun gasoline 25% on crude	50-50 mix M.C. and Pa. naphtha 24-34% on crude	50-50 mix M.C. and Pa. naphtha 23-34% on crude	M.C. naphtha 20-32% on crude
Charge:					
Naphtha	100.0	100.0	100.0	100.0	100.0
Outside gas feed, F.O.E.	....	....	....	57.4	83.8
Total charge	100.0	100.0	100.0	157.4	183.8
Products:					
Residue gas, F.O.E.	9.0	14.3	15.1	59.0	80.7
Cracked distillate	83.9	80.1	77.2	96.7	95.3
Residuum	7.4	2.6	7.8	9.7	9.2
Total products	100.3	97.0	100.1	165.4	185.2
Outside gas feed, cu. ft./bbl. charge	None	None	None	2,090	2,820
Residue gas, cu. ft./bbl. charge	506	728	651	2,565	3,200
Laboratory inspection—					
Naphtha:					
Gravity, °A.P.I.	47.9	58.2	50.8	49.2	50.2
Aniline point, °F.	136	132	141	....	137
Sulfur, L, per cent	0.03	0.22	0.06	....	0.04
Distillation, A.S.T.M.:					
Over point, °F.	266	96	206	219	156
End point, °F.	431	415	433	451	494
10 per cent at, °F.	290	170	300	290	244
50 per cent	311	266	345	342	345
90 per cent	372	374	395	412	439
Octane No., C.F.R.-A.S.T.M., clear	47.3	48.5	33.0	33.2	33.1
Stabilized distillate:					
Gravity, °A.P.I.	52.0	57.8	56.7	56.0	59.2
Acid heat, °F.	89	95	113	103	100
Aniline point, °F.	71	81	70	83	91
Sulfur, L, per cent	0.01	0.05	....	....	....
Vapor pres., 100° F., lb./sq. in.	8.2	9.7	11.5	10.1	11.1
Distillation, A.S.T.M.:					
Over point, °F.	100	93	95	86	86
End point, °F.	404	410	412	424	420
10 per cent at, °F.	152	122	120	119	120
50 per cent	282	211	264	241	225
90 per cent	349	337	368	378	372
Octane No., C.F.R.-A.S.T.M., clear	76.1	75.9	75.1	76	76.5
Octane No., C.F.R.-Research, clear	86.4	86.9	87.1	86.5	87.0
Residuum:					
Gravity, °A.P.I.	22.9	4.2	10.5	12.7	7.4
Viscosity, S.U.v., 100° F.	41	8,140	75	75	3,008
Sulfur, B, per cent	0.13	0.16	....	....	0.1
Water and sediment, per cent	0.2	0.1	0.2	0.1	0.1
Outside gas feed:					
Podbielniak analysis, mol per cent:					
Hydrogen	....	....	....	2.5	2.5
Methane	....	....	....	37.4	34.9
Ethane	....	....	....	20.4	18.8
Ethene	....	....	....	2.2	3.5
Propane	....	....	....	18.6	18.9
Propene	....	....	....	7.5	8.5
Butanes	....	....	....	5.0	6.7
Butenes	....	....	....	4.0	4.8
Pentanes	....	....	....	1.7	1.1
Hexanes and heavier	....	....	....	....	0.3
Hydrogen sulfide, mol per cent	....	....	....	0.2	0.3
Total unsaturates, mol per cent	....	....	....	14.4	17.2
Specific gravity, air = 1.0	....	....	....	1.077	1.120
Residue gas:					
Podbielniak analysis, mol per cent:					
Hydrogen	7.0	6.8	16.9	7.0	7.0
Methane	54.7	53.0	34.1	41.9	39.9
Ethane	25.6	26.4	26.7	23.9	24.2
Ethene	9.7	8.6	5.0	3.5	4.8
Propane	2.0	1.8	13.5	17.2	17.4
Propene	1.0	0.5	3.8	5.1	4.9
Butanes	....	2.4	....	0.9	1.0
Butenes	....	....	....	0.5	0.8
Hydrogen sulfide, mol per cent	....	0.5	....	0.2	0.3
Total unsaturates, mol per cent	10.7	9.1	8.8	9.1	10.5
Specific gravity, air = 1.0	0.700	0.770	0.86	0.906	0.935

TABLE 3—PROPERTIES OF VARIOUS PERCENTAGES OF STRAIGHTRUN GASOLINES AND NAPHTHAS FROM EASTERN VENEZUELA CRUDE

Percentage on crude—	Total gasoline 28.5	Straightrun gasoline 23.5	Naphtha 23.5 to 28.5	Straightrun gasoline 18.5	Naphtha 18.5 to 28.5	Straightrun gasoline 13.5	Naphtha 13.5 to 28.5
Gravity, °A.P.I.	60.5	64.6	45.7	68.5	47.9	72.8	50.8
Vapor pressure at 100° F.	9.6	....	....	....	....	15.2	....
Aniline point, °F.	120	121	126	124	136	127	116
Acid heat, °F.	3	4	3	5	2	7	2
Sulfur, per cent	0.01	0.01	0.05	0.01	0.03	0.01	0.01
A.S.T.M. distillation:							
Over point, °F.	101	94	318	90	266	85	230
End point, °F.	412	298	465	270	431	248	412
10 per cent at, °F.	158	136	329	128	290	119	258
50 per cent	240	205	349	185	311	172	286
90 per cent	342	270	409	242	372	213	358
Octane number, C.F.R.-A.S.T.M.	59.9	64.3	40.9	67.0	47.3	71.1	49.7

Types of Naphtha Polyform Units

To illustrate the flexibility of the process, the following descriptions of different types of polyform units now in service are given with simplified flow diagram and typical yields. Fig. 2 shows the simplest type of a once-through unit. This type of unit is particularly adapted for polyforming of naphthas, kerosene, and light furnace oil, with simultaneous polymerization of C_3 and C_4 hydrocarbons from other cracking units. The unit consists of the same elements in any ordinary type of cracking unit, such as heater, separating and fractionating tower, stabilizer, and absorber.

The cold naphtha charge is used for absorption oil in absorber, which is equipped with side-stream coolers for removal of heat of absorption for full control of absorption, and to give desired gas circulation. The rich oil from the absorber constitutes the furnace charge. A second absorber, not shown on flow sheet, may be added using light gas-oil reflux for absorption oil to extract the C_3 and C_4 hydrocarbons from outside gases charged to the unit. The second absorber is only necessary when outside gas feed contains large percentages of hydrocarbons lighter than propane, and it is not desired to boost the outside gases to the pressure in the naphtha absorber, as the gas-oil absorber may be operated at lower pressures. Ordinarily outside gases can be discharged directly into the naphtha absorber if in liquid phase or into vapor line between stabilizer and precondenser if in vapor phase.

Recirculated bottoms from the combined separating and fractionating tower is used for quench oil to the tube outlet ahead of the reducing valve in order to avoid coke formation in the transfer line and separating tower. The excess heat in the tar quench oil is usually sufficient for satisfactory reboiling of the polyform distillate in the stabilizer. The combined naphtha and absorbed-gas furnace charge is preheated to approximately 500° F. to 550° F. in trap tray and gas-oil side-stream high-pressure heat exchangers before entering the furnace. The furnace is usually designed with two chambers, one bringing-up section and one soaking section, to permit full control of polyform reactions.

Typical operating conditions for this type of unit are:

Back pressure on heating element 1,000-1,500 lb./sq. in.
Tower pressure 300- 400 lb./sq. in.
Outlet temperature from heater 1,020°-1,125° F.

Table 2 shows yields and inspections of the charge and products from naphtha polyforming without outside gas charge of (1) eastern Venezuela naphtha 10 per cent of crude, (2) West Texas straightrun gasoline 25 per cent of crude, and (3) a 50-50 mixture of Pennsylvania and Mid-Continent naphthas. In this table are also given the

yields and inspection of the charge and products from two naphtha polyform units installed at the Gulf Oil Corp.'s Pittsburgh and Cincinnati plants, charging, in addition to Mid-Continent naphtha, all of the gases from the balance of the refinery. These units are equipped with gas-oil absorbers operating at approximately 225-lb. per sq. in. pressure for the absorption of C_3 and C_4 hydrocarbons from the refinery gases. The gas oil is a sidestream reflux from the fractionating tower and the rich gas oil is refluxed back to the fractionating tower, in this manner introducing the C_3 and C_4 hydrocarbons in the outside gas to the units.

Figs. 3 and 5 give complete yield-octane relationship from polyforming the eastern Venezuela naphtha and the West Texas straightrun gasoline for which inspections are given in Table 2. Curves showing TEL response with 1 and 3 cc. of TEL per gallon of polyform distillate are indicated on these plots.

Fig. 4 contains plots showing volume per cent yield of blends, clear, plus 1 cc. TEL per gal. and plus 3 cc. TEL per gal. of clay-treated naphtha polyform distillate and straightrun Venezuela gasolines at various degrees of polyforming the naphthas. The yields are indicated in per cent of the 28.5 per cent on the crude straightrun eastern Venezuela gasoline with properties as shown in Table 3. This gasoline was reduced by removing 5, 10, and 15 per cent on crude of naphtha cuts with properties as shown on Table 3, which also shows inspections on the 23.5, 18.5, and 13.5 per cent on crude of light gasoline cuts remaining after removal of the naphtha cuts. The naphtha cuts were polyformed to different octanes and blends prepared from the various naphtha polyformed distillates with corresponding straightrun gasolines. Fig. 4 is very useful in working up economic balances to determine the most economical percentage of naphtha to polyform; it also shows clearly the large TEL saving which may be obtained by the process at the expense of small reductions in total yield of gasoline.

There are at present three units of this type in service, which, besides polyforming naphtha, polymerize all residue gases from the balance of the refinery. Two units are under construction.

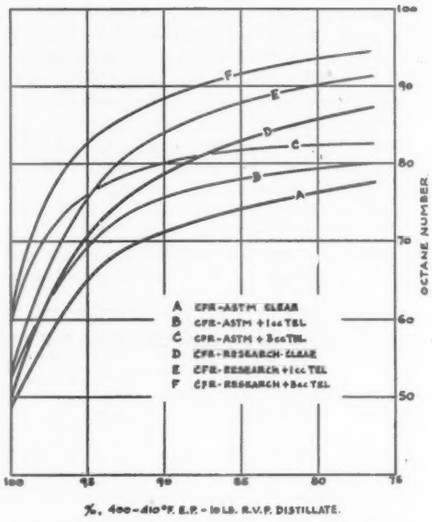

A CFR-ASTM CLEAR
B CFR-ASTM +1cc TEL
C CFR-ASTM +3cc TEL
D CFR-RESEARCH CLEAR
E CFR-RESEARCH +1cc TEL
F CFR-RESEARCH +3cc TEL
OCTANE NUMBER
%, 400-410°F. E.P. - 10 LB. R.V.P. DISTILLATE.

Fig. 5—Yield-octane relationship from West Texas straightrun gasoline polyforming

TABLE 4—YIELD DATA FROM COKING SECTION OF POLYFORM COKING UNIT

Yield data—	1	2	3	4	5
Charge—Volume per cent of total charge:					
Residuum from vis-breaking and clean-oil cracking	92.3	....	....	....	....
Residuum from black and clean-oil cracking	....	88.6	....	....	....
Reduced Mid-Continent crude	....	....	92.3	94.5	....
"A" grade asphalt from Mid-Continent crude	....	....	....	....	91.7
Residuum from naphtha polyform operation	7.7	11.4	7.7	5.5	8.3
Total heavy oil charge to coking section	100.0	100.0	100.0	100.0	100.0
Products—Volume per cent of total crude:					
Residue gas	15.8	22.3	14.3	10.4	14.5
Polyformed distillate	16.5	15.7	28.6	27.2	22.0
Gas oil	41.5	28.6	45.0	50.3	44.8
Coke (40¢ lb./bbl.)	29.1	33.0	15.6	15.4	22.4
Total products	102.9	99.6	103.4	103.3	103.7
Laboratory inspection—					
Outside heavy oil charge:					
Gravity, °A.P.I.	10.2	9.9	21.8	22.0	16.1
Viscosity, S.U.v. at 100° F.	2,294	1,367	1,361	1,232	....
Viscosity, S.U.v. at 210° F.	101	....	....	....	689
Pour, °F.	+20	+20	+40	+65	+60
Water and sediment, per cent	0.4	0.1	0.2	0.1	0.1
Conradson carbon residue, per cent	11.3	8.6	4.6	4.6	8.4
Gas oil produced:					
Gravity, °A.P.I.	17.8	14.3	25.7	27.1	24.5
Pour, °F.	+20	+30	+35	+50	+40
Conradson carbon residue, per cent	0.09	0.15	0.08	0.08	0.18
Aniline point, °F.	82	60	135	143	121
Distillation, A.S.T.M.					
Over point, °F.	466	452	458	440	435
10 per cent at, °F.	508	522	521	513	498
50 per cent	587	598	616	618	604
70 per cent	671	640	661	666	668
Coke:					
V.C.M., per cent	10.8	9.7	13.1	9.0	10.8

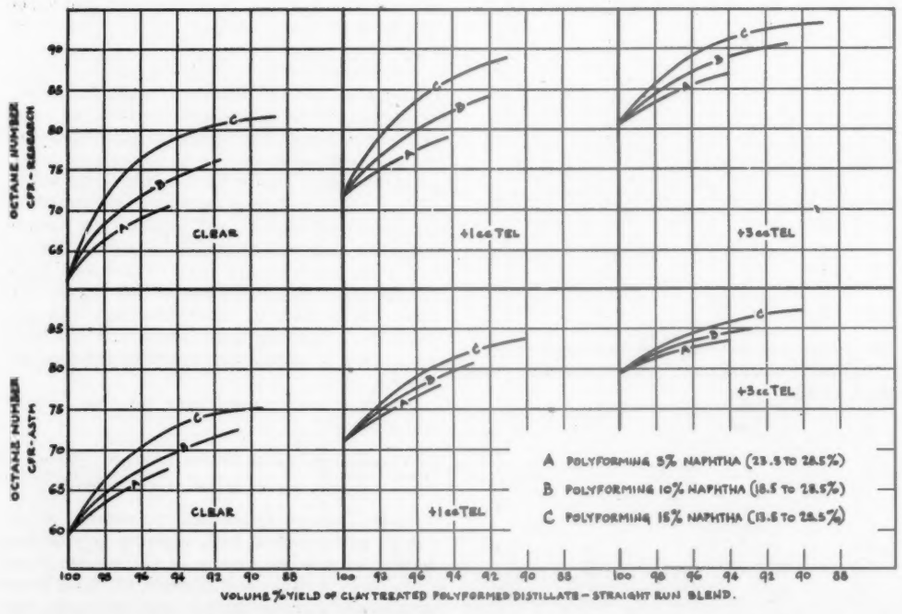

OCTANE NUMBER CFR-RESEARCH
OCTANE NUMBER CFR-ASTM
CLEAR
+1cc TEL
+3cc TEL
A POLYFORMING 5% NAPHTHA (23.5 TO 28.5%)
B POLYFORMING 10% NAPHTHA (18.5 TO 28.5%)
C POLYFORMING 15% NAPHTHA (13.5 TO 28.5%)
VOLUME % YIELD OF CLAY TREATED POLYFORMED DISTILLATE - STRAIGHT RUN BLEND.

Fig. 4—Yield-octane relationship of blends of varying percentages of undercut straightrun gasoline with clay-treated polyformed naphtha from an original charge of 28.5 per cent eastern Venezuela straightrun gasoline

Two of the existing units are equipped with coking drums, into which the efflux from the furnaces is discharged. The stock to be coked, reduced crude or pressure-still tar from other units, is introduced as quench oil to the transfer line at the furnace outlet. The tar is coked by means of waste heat in the furnace discharge. Reduced crude or tar of any gravity can be coked in this manner, or any heavy slop oil from the refinery can be converted to gasoline, coke, and clean pressure-still charging stock.

Typical yields from polyform coking different heavy charging stocks are shown in Table 4. The operations indicated in Table 4 were conducted to produce, in addition to gasoline and coke from the heavy stocks, a pressure-still charging stock of approximately 750° F. end point suitable for cracking in ordinary thermal gas-oil cracking units. This type of coking is very cheap as the only added operating expense is the cost of cleaning coke drums, and the overhead charges on coke-drum installation. There are distinct advantages in coking a tar, low in hydrogen, in gas dilution, because of the low percentage of coke produced from polyform coking.

Two-Coil Combination Crude Polyform Unit

A two-coil combination crude polyform unit flow is shown in Fig. 6. In a unit of this type, when there is no straightrun naphtha included in the charge, the next refractory stock, light recycle oil, is used for absorption oil in the absorber. The general flow, Fig. 6, is as follows: Crude is preheated in exchangers and flashed into a topping tower, from which the desired straightrun products are removed. The hot reduced crude is charged direct to the vis-breaker furnace together with a heavy-recycle sidestream from the separator. C_3 and C_4 condensate from condensation of stabilizer overhead is pumped through high pressure exchangers into the vis-breaker furnace charge. The clean recycle stock from the base of the fractionating tower reboils the polyformed distillate in the stabilizer, preheats the rich recycle furnace charge, and is then cooled and pumped to the top of the absorber as absorption oil. The rich light recycle stream is pumped from the base of the absorber through high-pressure heat exchangers to the recycle polyform coil.

In a unit of this type very little cracking and polymerization of gases takes place in the vis-breaker coil. Practically all gas cracking and polymerization occurs in the recycle coil. Typical operating pressures and temperatures applied in

polyform vis-breaking heavy reduced crudes are listed below:

	Lb./sq. in.
Back pressure of vis-breaker coil	400- 600
Back pressure of recycle coil	1,000-1,200
Tower pressure	300- 400
	°F.
Outlet temp. of vis-breaker coil	900- 930
Outlet temp. of recycle coil	1,000-1,010

By adding coke drums between the vis-breaker furnace and the separating tower the vis-breaker charge may be once-through coked with a marked increase in polyformed gasoline yield. Table 5 shows yields from polyform vis-breaking of 17.9° A.P.I. Venezuela crude and polyform vis-breaking of 34.3° A.P.I. gravity West Texas crude.

Four-Coil Combination Crude Polyform Unit

Fig. 7 is a simplified flow sheet of a 22,000-bbl.-per-day crude-topping and polyform unit at the Gulf Oil Corp.'s Port Arthur plant. The only products from this unit are stabilized straightrun gasoline, stabilized polyformed distillate, Bunker C fuel oil and dry gas of 0.78 to 0.84 sp. gr. In one unit it replaces the conventional type of combination units, thermal or catalytic polymerization unit, gas compression and absorption plant, crude and pressure-still distillate stabilization plants.

The general flow is as follows: Crude is charged through heat exchangers into the high-pressure-crude flash tower from the top of which unstabilized straightrun gasoline is removed. The straightrun gasoline is stabilized in the stabilizer section of the crude flash tower and from here is passed to running tanks. The No. 1 reduced crude is pumped through a crude-heating coil into the atmospheric tower from the top of which a straightrun naphtha cut is removed, condensed, and pumped as absorption medium to the top of the absorber. From the atmospheric topping tower a furnace oil or kerosene sidestream can be removed, if required. Below the furnace-oil drawoff a virgin gas-oil cut is removed. This virgin gas-oil cut of 1.0-1.5 N.P.A. color and approximately 700° F. end point is charged hot to the vigin gas-oil polyform coil with its allocated C_3 and C_4 diluent. In this coil the gas oil is polyformed once-through to between 35-45 per cent gasoline production per pass.

From the bottom of the atmospheric tower the No. 2 heavy reduced crude is charged hot through the polyform vis-breaker coil together with the heavy tar stripper sidestream and required C_3 and C_4 diluent. A conversion per pass of approximately 14 to 16 per cent is obtained in this coil. The light recycle stock from the base of the fractionating tower of approximately 1.5 N.P.A. color and 700 end point is likewise charged hot to the recycle polyform coil with the proper C_3 and C_4 dilution. The light recycle stock is subjected to a conversion per pass (gasoline produced) of ap-

TABLE 5—YIELDS AND PRODUCTS FROM POLYFORM OPERATION ON CRUDE OILS

Charge:	Heavy Venez. crude	West Texas crude	West Texas crude
Running for:	Heavy fuel oil	Light fuel oil	Bunker C fuel oil
Throughput, B/stream day	5,000	5,000	22,000
Type unit	Polyform	Polyform	Polyform
Polyform coils:			
Reduced crude	1	1	1
Recycle	1	1	1
Virgin gas oil	....	....	1
Naphtha	....	....	1
Yield data—Volume per cent of crude:			
Gas, F.O.E.	4.9	3.9	11.5
Straightrun gasoline	8.8	29.6	13.1
Furnace oil	2.2	4.2	0.6
Stabilized polyformed dist.	32.7	29.8	50.4
Fuel oil	54.6	32.0	27.4
Total	103.2	99.5	103.0
Gas, cu. ft./bbl. crude	239	192	420
Gas, cu. ft./bbl. polyformed dist.	733	644	835
Laboratory inspections—			
Crude:			
Gravity, °A.P.I.	17.9	34.3	34.4
Viscosity, S.U.v. at 100° F.	1,026	45	43
Sulfur, B, per cent	1.92	1.50	1.57
Water and sediment, per cent	0.5	0.1	0.2
Distillation:			
Over point, °F.	198	124	130
Per cent at 392° F.	8	31	30
Per cent at 700° F.	65	76	....
10 per cent at, °F.	431	240	235
50 per cent	682	554	560
Stabilized polyformed dist.:			
Gravity, °A.P.I.	55.5	58.0	56.7
Sulfur, L, per cent	0.39	0.44	0.24
Acid heat, °F.	112	114	121
Aniline point, °F.	88	88	....
Octane No., C.F.R.-A.S.T.M.	74.9	74.8	73.3
Vapor pressure, 100° F., lb./sq. in.	11.2	9.5	9.6
Distillation:			
Over point, °F.	82	88	95
End point, °F.	422	422	418
10 per cent at, °F.	132	127	136
50 per cent	269	253	242
90 per cent	392	382	372
Fuel oil:			
Gravity, °A.P.I.	5.1	12.0	7.1
Viscosity, Furol at 122° F.	1,546	84	215
Sulfur, B, per cent	2.9	2.0	2.06
Water and sediment, per cent	0.1	0.2	0.5
Pour, °F.	55	20	35
Residue gas:			
Sp. gr. (air = 1.0)	0.819	0.837	0.838
Podbielniak analysis:			
Methane and hydrogen, mol per cent	55.9	54.2	51.4
Ethane and ethylene	32.8	33.4	34.3
Propane and propylene	10.2	11.3	13.0
Butanes and heavier	1.1	1.1	1.3
Total unsaturates	6.4	5.6	5.4

TABLE 6—COMPARISON OF C.F.R.-A.S.T.M., C.F.R.-RESEARCH, AND C.F.R.-UNIONTOWN 1937 ROAD OCTANE NUMBERS OF POLYFORM GASOLINES AND STRAIGHTRUN GASOLINE BLENDS

	Octane number			C.F.R.-Uniontown 1937 road octane number				
Description of gasoline—	C.F.R. A.S.T.M.	C.F.R. Research	Research minus A.S.T.M.	Chevorlet	Ford	Plymouth	Ave.	Road minus A.S.T.M.
Naphtha polyform	75.1	85.0	+9.9	79.7	79.1	78.8	79.2	+4.1
Naphtha polyform with outside gases	76.1	87.2	+11.1	82.3	...	...	...	+6.3
Mixture—48 per cent Pa. straightrun plus 52 per cent naph. poly.	70.0	74.5	+4.5	...	...	...	72.0	+2.0
West Texas polyform	73.6	84.2	+10.6	77.0	77.3	77.2	77.2	+3.6
Mixture of West Texas straightrun and West Texas polyform	70.8	73.6	+3.1	75.0	74.3	74.8	74.7	+4.2

TABLE 7—BLENDING VALUE OF 76.5 C.F.R.-A.S.T.M. OCTANE NUMBER POLYFORM GASOLINE IN A5 REFERENCE FUEL AND MID-CONTINENT STRAIGHTRUN NAPHTHA

Blend No.:	1	2	3	4	5
Per cent polyform distillate in blend	5	15	25	50	75
Per cent A5 reference fuel in blend	95	85	75	50	25
C.F.R.-A.S.T.M. octane No. of blend	43.5	48.1	52.6	62.1	70.0
Calculated C.F.R.-A.S.T.M. octane No. Blending value of polyform distillate	102.0	92.0	89.2	83.8	79.8

Blend No.:	1	2	3	4	5	6
Per cent polyform distillate in blend	5	10	20	30	40	50
Per cent 51.5° A.P.I. M.C. naphtha in blend	95	90	80	70	60	50
C.F.R.-A.S.T.M. octane No. of blend	39.7	42.3	48.9	52.0	56.9	61.9
Calculated C.F.R.-A.S.T.M. octane No. Blending value of polyform distillate	110	109	100	89	88	87

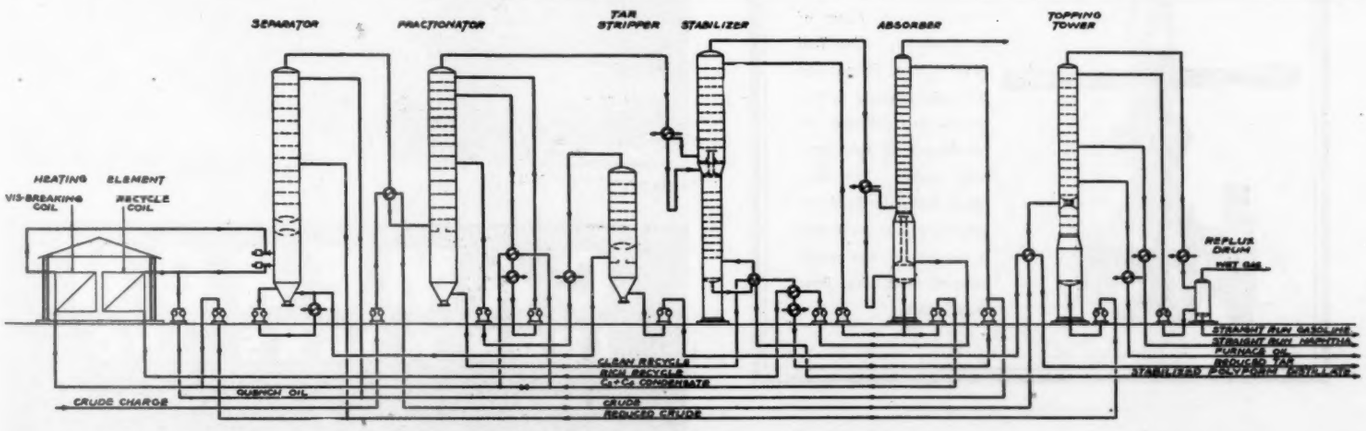


Fig. 6—Flow sheet—two-coil co mbination crude polyform unit

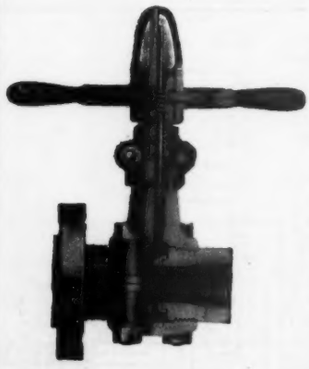
WE'RE CAMERON-IZED!

CAMERON *FLEX-SEAL* MUD VALVES CONTINUE TO SET NEW RECORDS FOR LOW-COST, TROUBLE-FREE PERFORMANCE

THOUSANDS of Cameron Flex-Seal Mud Valves now in constant service provide unquestionable proof of their superiority to conventional mud valves and stop cocks. One feature alone—the renewable resilient flow-way insert—is sufficient to make it outstanding by comparison. It is this resilient insert that absorbs the cutting action of abrasive laden fluid and provides a pressure-tight seat for the gate. When the insert eventually wears out, as revealed by the indicator-type gate stem, it may be replaced at low-cost, in the field with ordinary rig tools.

Additional Features: Entire valve is of forged alloy steel; all parts subjected to wear are heat-treated; it is the only gate type valve without a metal-to-metal seal; the hubs are connected to the body by interlocking shoulders and grooves which permit the valve to be changed from screwed end to flanged end or any other type connection in a few minutes. This construction also allows the valve to swivel like a union when making up in a manifold.

*Available in 2, 3, and 4 inch sizes—6,000 lb. test pressure.



Cross-Section View of a Cameron Flex-Seal Mud Valve. Note that the body is made in two pieces to facilitate replacement of the flow-way insert. The two-piece body is held together by four studs and is sealed by lips made integral with the flow way insert.

CAMERON
IRON WORKS, INC.

proximately 25 to 32 per cent. The C_3 and C_4 diluent for these three coils is all furnished as condensate from stabilizer overhead and is composed of approximately 25 per cent butanes and 75 per cent propanes. Rich naphtha from the base of the absorber is polyformed in the naphtha polyform coil. Both the C_3 and C_4 condensate diluent and the rich naphtha are preheated in high-pressure heat exchangers to between 550° F. to 620° F. before being charged to cracking coils. All four coils discharge into one common separating tower, where the tar is reduced to 10° to 12° A.P.I. gravity without any difficulty. The tar is later reduced with steam in the atmospheric tar stripper to any desired gravity, such as 2° A.P.I.

The type of pyrolytic conversion in this unit is truly selective. All virgin stocks are once-through polyformed before entering the tower system. For this reason the recycle stock is a real recycle oil, highly refractory, with aniline point of 30 to 35, as compared with 150 for virgin gas oil and 75 to 80 aniline point for recycle stock from thermal cracking units. Typical operating pressures and temperatures for this unit are as follows:

	Lb./sq. in.
Back pressure on naphtha coil	1,000-1,200
Back pressure on recycle coil	1,000-1,200
Back pressure on virgin gas-oil coil	500- 600
Back pressure on red. crude coil	560- 600
Tower pressures	350- 400
	°F.
Outlet temperature of naphtha coil	1,060-1,070
Outlet temperature of recycle coil	1,000-1,010
Outlet temperature of virg. gas-oil coil	995-1,000
Outlet temperature of red. crude coil	915- 930

Typical yields when charging a 34.4° A.P.I. West Texas crude are shown in Table 5. Fig. 9 shows a comparison of octane numbers and TEL susceptibility of polyformed and thermal-cracked gasolines from West Texas crude.

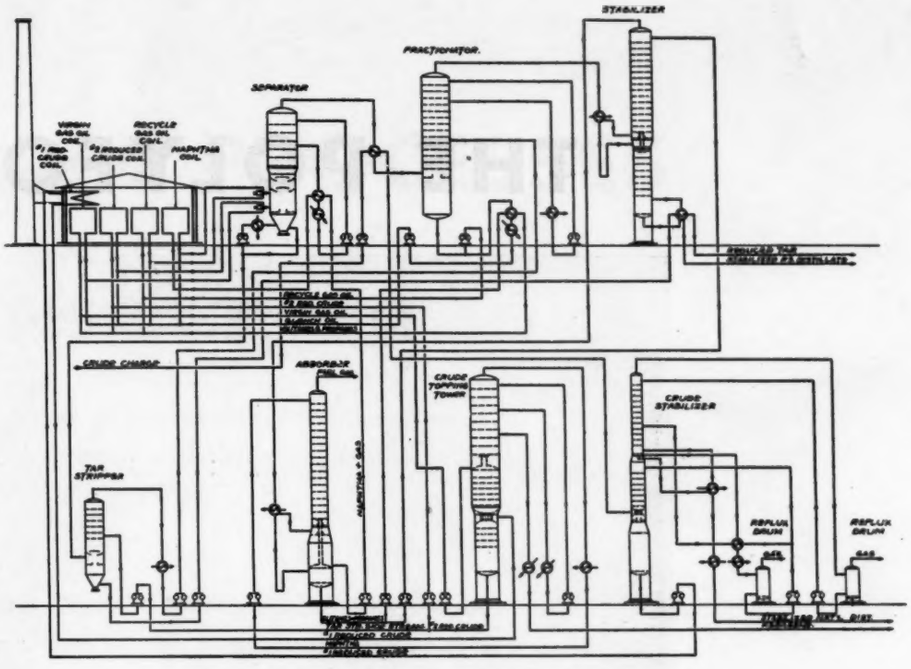


Fig. 7—Flow sheet—four-coil combination crude polyform unit

Properties of Polyform Gasoline

Octane number.—The octance number of polyform gasoline depends, like the octane number of all other cracked gasolines, to some extent on the characteristics of the charging stocks. In general, the highest C.F.R.-A.S.T.M. octane number can be obtained from a naphthenic charging stock of low sulfur content and the lowest octane number from a paraffinic stock, and from high sulfur stocks. However, in naphtha polyforming, it is always possible to produce a gasoline with an octane number, C.F.R.-A.S.T.M., of 75 to 77, regardless of the characteristics of the charging stock.

This is illustrated in Table 2, which gives the yields and inspections on charge and products from three different types of naphtha charging stocks of different boiling ranges, sulfur content, and octane numbers. It should be noted that the C.F.R.-A.S.T.M. octane number of the polyform distillate from the three charging stocks are very close, varying between 75.1 for the distillate from Mid-Continent-Pennsylvania naphtha mixture, and 76.1 from the eastern Venezuela naphtha, while the research octane number of the Mid-Continent-Pennsylvania distillate is the highest, 87 against 86.4 for the distillate from the eastern Venezuela naphtha. This can be explained when comparing the C.F.R.-Research octanes with the yields from the various stocks. The yield of 83.9 per cent from the eastern Venezuela naphtha is the highest, while the yield from the Mid-Continent-Pennsylvania naphtha of 77.2 per cent is the lowest, indicating a more severe conversion of the Mid-Continent-Pennsylvania naphtha.

Polyform gasoline is characterized by having a very much higher appreciation between C.F.R.-A.S.T.M. octane ratings and C.F.R.-Research octane ratings than ordinary thermal-cracked gasoline. The spread between the A.S.T.M. and Research octane numbers of an ordinary thermal-cracked gasoline is of the order of 5 to 9, while the spread for a polyformed gasoline is of the order of 9 to 14.

The appreciation of road octane number above the C.F.R.-A.S.T.M. octane number is better for the polyform gasoline than for an ordinary thermal-cracked gasoline from the same stock.

Table 6 shows a comparison between C.F.R.-A.S.T.M., C.F.R.-Research, and C.F.R.-Uniontown 1937 road octane numbers of various polyformed gasolines and blends of these gasolines with straightrun gasolines.

Blending value.—Polyform gasolines have excellent blending values in blends of straightrun gaso-

(Continued on Page 62)

PROPERTIES OF BLEND COMPONENTS

	Naphtha Polyform Gasoline	Thermal Cracked Gasoline	Str. Run Gasoline
Gravity, °A.P.I.	58.7	62.1	68.1
ASTM Distillation			
Overpoint, °F	90	87	86
Endpoint, °F	414	384	323
Percent Distilled at °F			
10	134	125	142
50	257	241	217
90	384	350	287
Recovery, %	97	97	97
Sulfur, %	0.06	0.06	0.08
Octane, CFR-ASTM	75.1	69.0	60.0
Octane, CFR-Research	87.1	78.0	60.0

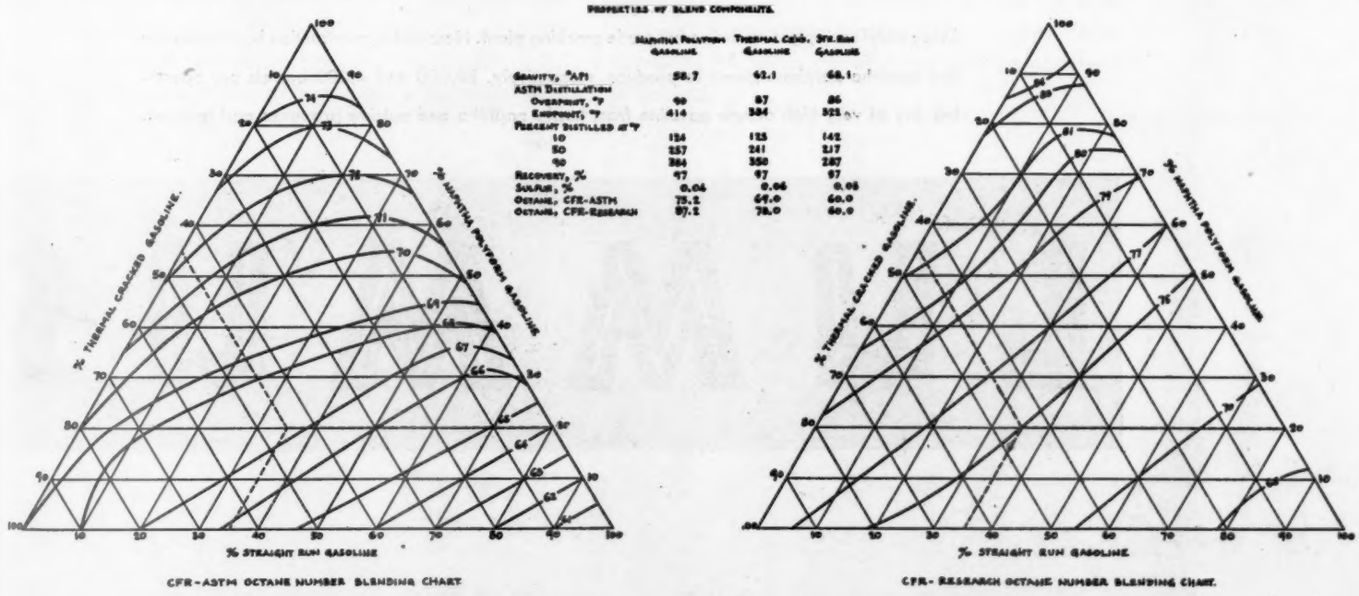
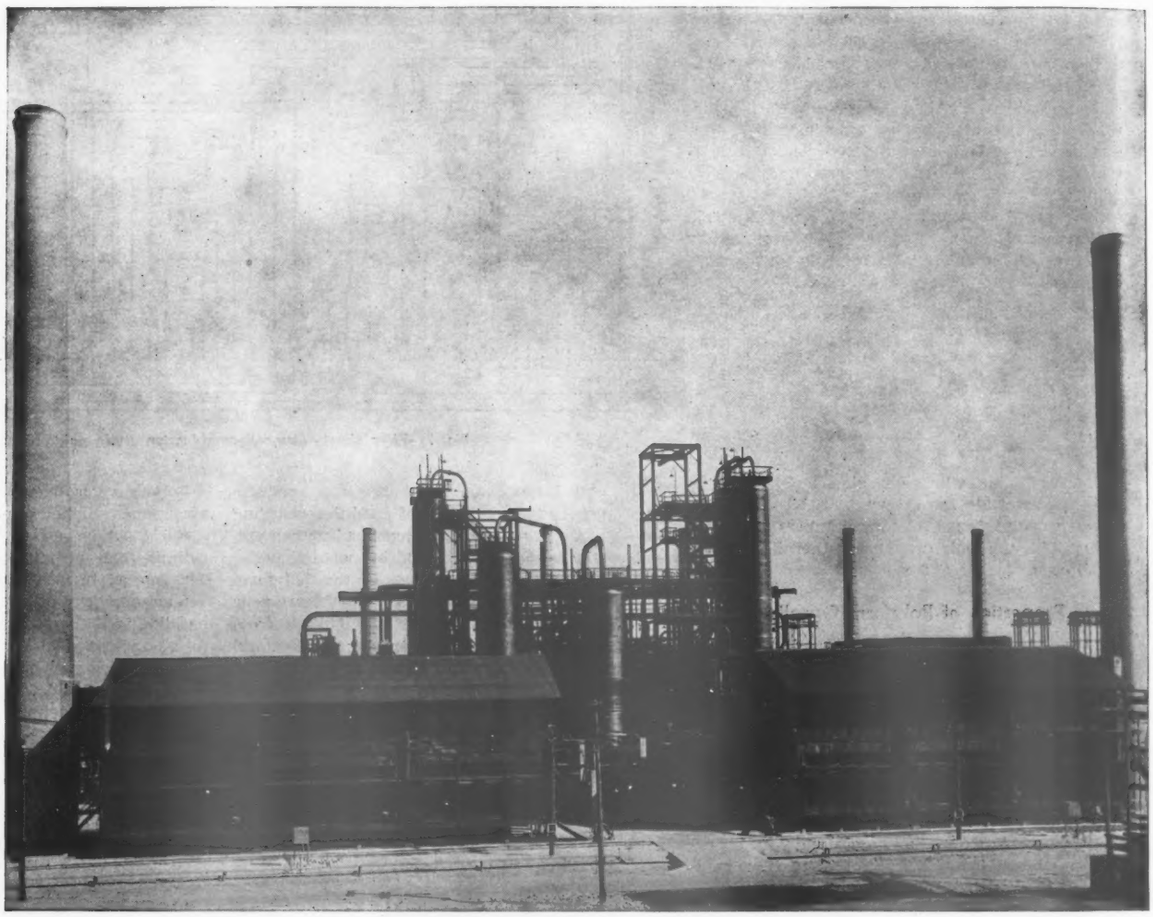

% THERMAL CRACKED GASOLINE
% NAPHTHA POLYFORM GASOLINE
% STRAIGHT RUN GASOLINE
CFR-ASTM OCTANE NUMBER BLENDING CHART
% THERMAL CRACKED GASOLINE
% NAPHTHA POLYFORM GASOLINE
% STRAIGHT RUN GASOLINE
CFR-RESEARCH OCTANE NUMBER BLENDING CHART

Fig. 8—Blending charts for straightrun gasoline and thermal cracked gasoline from gas oil with naphtha polyform gasoline

THE POLYFORM AND



Large polyform or gas reversion full crude cracking plant. Now under construction by Lummus are two naphtha polyform plants to produce, respectively, 10,000 and 4,000 barrels per operating day of very high octane gasoline from heavy naphtha and outside propanes and butanes.

LUMMUS

Gas Reversion PROCESSES

produce:

- **— gasoline with good distillation characteristics, good color, gum and oxidation stability; same high octane throughout entire boiling range.**
- **— research octane of from 85 to 95.**
- **— a spread between the CFR-ASTM and research octane of from 9 to 14 numbers—and between CFR-ASTM and road octane of 3 to 8 numbers, depending on feed stock and operation.**
- **— high blending value and good lead susceptibility.**
- **— high overall yields.**
- **— aviation gasoline base stock.**
- **— toluene, benzol, xylene.**

The polyform and gas reversion processes offered by Lummus, operating under patents of the Phillips Petroleum Company and Gulf Oil Corporation, have had over four years refinery production on large scale units. Ten polyform and gas reversion plants are in operation. The processes make possible the production of high octane gasoline with low specific gravity fuel gas from *all* cracking stocks. When applied to gas oils or reduced crudes, conversions per pass approximately double those obtained by conventional cracking are possible. Full crudes may be selectively cracked. Non-residuum full coking operations may be obtained if desired.

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THE LUMMUS COMPANY, 420 Lexington Avenue, NEW YORK, N. Y.
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lines and naphthas, as indicated in Table 7. The blending value of polyform gasoline with thermal-cracked gasoline of 68 to 70 octane number (C.F.R.-A.S.T.M.) is practically the same as the clear octane nuumber; the octane number of the blend being close to the arithmetic mean of the octane number of the components.

Figure 8 presents two three-coordinate blending charts, with C.F.R.-A.S.T.M. and C.F.R.-Research octane numbers, for blends of (1) straightrun gasoline, (2) thermal-cracked gasoline from gas-oil cracking, and (3) naphtha polyformed gasoline, all stocks of Mid-Continent origin. The inspections of these stocks follow:

	Straightrun gasoline	Thermal cracked gasoline	Naphtha polyformed gasoline
Gravity, °A.P.I.	68.1	62.1	61.1
A.S.T.M. distillation, °F.:			
Over point	86	87	86
End point	322	384	402
10 per cent at	142	125	130
50 per cent at	217	241	244
90 per cent at	287	350	352
Recovery, per cent	97.0	97.0	97.0
Acid heat, °F.	6	172	151
Per cent sulfur	0.05	0.06	0.05
Octane No.:			
C.F.R.-A.S.T.M.	60	69	75.2
C.F.R.-Research	60	78	87.2

To illustrate the use of these charts, lines are indicated for a blend of 35 per cent straightrun gasoline, 45 per cent thermal-cracked gasoline, and 20 per cent naphtha polyformed gasoline, showing 67.2 C.F.R.-A.S.T.M. octane number on the one chart and 75 C.F.R.-Research octane number on the other. These charts show the high blending value of a polyformed distillate in the run-of-plant gasoline from a northern refinery.

Lead susceptibility.—The lead susceptibility of polyform gasolines for the same starting octane number compares very closely to thermal-cracked gasolines and is influenced similarly by sulfur content. Figs. 3 and 5 show the lead susceptibility of these gasolines. Fig. 9 shows a comparison of lead susceptibility of polyform and thermal-cracked gasolines from West Texas crude. From this plot it should be noted that it takes 1.2 cc. per gallon of TEL, corresponding to approximately 13 cents per barrel of gasoline to lead the ordinary thermal-cracked gasoline to the same C.F.R.-Research octane number as the polyformed distillate.

Treating of Polyform Distillate

The treating of polyform distillates is no different than the treating of conventional thermal-cracked distillates and presents no added problems. Polyform gasoline made from sweet naphtha or crude may be cut directly off the unit and blended into a final colored gasoline after the addition of gum inhibitor. For use in water-white gasoline blends, polyform distillate from sweet naphtha or crude may be clay-treated with a production of 3,000 to 5,000 bbl. per ton of clay and resulting in a distillate of +30 color, an increase in C.F.R.-A.S.T.M. octane of 0.5 to 0.75 point, a decrease in acid heat, and an increase in gum inhibitor response. Table 8 shows the inspections before and after clay-treating polyformed Mid-Continent naphtha distillate.

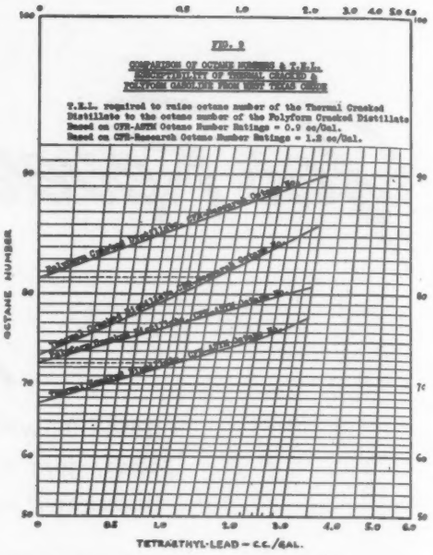


TABLE 8—PROPERTIES OF CLAY-TREATED AND ACID-TREATED POLYFORM GASOLINES

Polyform gasoline from:	M.C. naphtha		West Texas crude					
			Caustic-washed, acid-treated, doctor-sweetened dist. of various end points from raw dist.					
	Raw dist.	Clay treated	Raw dist.	300 e.p.	325 e.p.	350 e.p.	375 e.p.	400 e.p.
Yield, per cent of charge	100	97	100	58.1	65.1	77.2	84.5	90.6
Gravity, °A.P.I.	58.4	59.8	56.7	68.1	65.3	61.3	60.3	57.9
Color, Saybolt	....	+30	+6	+30	+30	+30	+27	+25
Color, N.P.A.	1.0	....	....	....	....	....	....	....
Doctor test	Bad	Poor	Bad	Good	Good	Good	Good	Good
Sulfur, L, per cent	.05	.03	24	.05	.07	.08	.09	.10
Copper dish gum, mg./100 cc.	118	9	....	....	....	....	....	....
Preformed gum, mg./100 cc.	4	4	17	1	2	3	3	3
Oxygen gum, mg./ 100 cc.	....	....	....	67	55	181	44	140
Oxygen stab., min./210° F.	+45	+30	195	45	75	30	75	135
Acid heat, °F.	120	98	121	146	142	132	134	116
Aniline point, °F.	85	92	....	....	....	....	....	....
Octane No., C.F.R.-A.S.T.M.	75.8	76.5	73.3	75.9	75.4	74.8	73.8	73.2
Octane No., L-3	79.8	80.1	....	77.9	77.0	76.6	75.8	75.3
Reid v.p. at 100° F., lb./sq. in.	10.9	11.4	9.6	12.9	11.7	10.9	10.1	9.8
Distillation:								
Over point, °F.	88	82	95	94	96	98	100	100
End point, °F.	416	415	418	302	326	348	375	395
10 per cent at	122	119	136	118	124	130	136	139
50 per cent at	226	224	242	184	196	216	230	240
90 per cent at	374	372	372	260	282	308	334	351
Recovery, per cent	96	96	97	96	96	97	97	97

TABLE 9—PROPERTIES OF AVIATION GASOLINE AND SAFETY FUEL FROM POLYFORM GASOLINE

Yield data—	Naphtha	Polyformed distillate	Finished products: Aviation gasoline	Finished products: Safety fuel
Volume per cent polyformed distillate	....	100.0	39.2	35.3
Inspection—				
Gravity, °A.P.I.	47.5	49.8	55.8	36.2
Sulfur, L, per cent	0.05	0.04	0.011	0.018
Freezing point, °F.	....	....	....	Bel. —76
Copper dish gum, mg./100 cc.	....	187	1	....
Oxygen stability, 212° F., minutes	....	105	300+	....
Oxygen gum, mg./100 cc.	....	219	1	....
Acid heat, °F.	2	68	10	2
Aromatic content, per cent				
Benzene	....	4.4	....	....
Toluene	....	10.7	....	....
Xylene	....	11.6	....	....
Total	....	26.7	....	....
Aniline Point, °F.	136	37.1	....	....
Octane No., C.F.R.-A.S.T.M.	47	82	77	80
+1 cc. TEL/gal.	57	86	84	86
2	....	88	88	87
3	66	90	90	88
Vapor pressure, 100° F., lb./sq. in.	....	10.0	6.2	....
Distillation, A.S.T.M.:				
Over point, °F.	266	86	114	301
End point, °F.	431	448	307	426
10 per cent at, °F.	290	139	156	311
20	296	....	170	314
50	311	245	205	326
90	372	362	250	372

Inspection of Cuts From Fractional Distillation of Polyform Distillate

Cut No.:	1	2	3	4	Bottoms	Loss
Yield, per cent by volume	20.5	20.5	20.4	18.9	16.0	3.7
Gravity, °A.P.I.	78.5	54.7	44.4	38.8	30.2	....
Aromatic content, per cent						
Benezene	3.2	11.8	7.0	....	....	....
Toluene	2.0	10.5	24.8	8.7	....	....
Xylene	....	3.8	14.5	34.8	1.9	....
Total	5.2	26.1	46.3	43.5	1.9	....
Aniline point, °F.	....	51	26.3	11.3	....	....
Distillation, A.S.T.M.:						
Over point, °F.	71	132	196	248	324	....
End point, °F.	263	312	328	364	436	....
10 per cent at, °F.	77	157	212	265	336	....
50	117	182	233	285	355	....
90	188	227	272	322	396	....

Aviation Gasoline From Polyform Distillate

With modified operating conditions a polyform unit can be adjusted to produce a distillate with an octane number C.F.R.-A.S.T.M. of from 80 to 84. A distillate of this type may be produced from any type of stock, but preferred stocks are gasolines, naphthas, kerosene, and light furnace oils.

The 80-84 octane polyform distillate is highly aromatic and can be acid-treated to produce a satisfactory aviation gasoline of approximately 77-79 C.F.R.-A.S.T.M. octane number, which can be leaded to 90 C.F.R.-A.S.T.M. octane number with less than 3 cc. of TEL per gallon, and an 80 C.F.R.-A.S.T.M. octane-number aviation safety fuel with boiling range between 300° and 425° F.

To produce these aviation fuels the polyformed distillate is first separated into a light and a heavy cut by rerunning. The light cut is cold-acid-treated with 20 lb. of 98 per cent acid and rerun to aviation gasoline boiling range. The heavy cut is treated with 5 lb. of 98 per cent acid and rerun to safety fuel specifications.

Table 9 gives the inspections of the original charge naphtha, the 82 C.F.R.-A.S.T.M. octane number polyformed distillate produced from this naphtha, and the finished aviation gasoline and safety fuel produced from polyformed distillate.

The foregoing operation may be carried out with a somewhat modified flow arrangement to yield an increased amount of aviation gasoline without the simultaneous production of safety fuel.

It will noted from Table 9 that the aromatic content of the 82-octane polyformed distillate, particularly toluenes and xylenes, is high and that these fractions may be readily concentrated by distillation.

Acknowledgment

Due credit is given the operating personnel, laboratories and technical staff of the Gulf Oil Corp. for the inspection, analytical and operating data recorded in this paper.

Small Generating Plant Supplies Pumping Power in Illinois Pool

By HARRY F. SIMONS

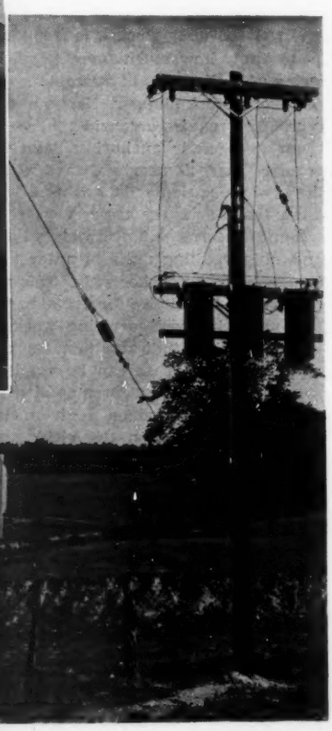
EFFICIENT pumping of relatively shallow oil wells by electricity is being accomplished through a carefully designed system of the Magnolia Petroleum Co. in the Cordes pool in Washington County, Illinois. One small generating plant is used for the pumping of 46 producing wells and the operation of a pump at a salt-water disposal well. Approximately 1,000 bbl. of fluid are lifted daily by the pumps.

The field is located in Township 3s-3w, mainly in Sections 14, 15, 23, and 26, although it extends slightly into the adjoining sections. The pool was discovered early in 1939 by the G. H. Blankenship No. 1 Dennis, NE SW NE Section 14-3s-3w, which made 25 bbl. daily from the Benoist sand topped at 1,228 ft. and drilled to 1,239 ft. Development was delayed by the severe weather, but by the end of 1939 over a hundred wells had been drilled with practically all of them better producers than the discovery well. At the present time the field has 118 producing wells and 9 dry holes and drilling activity is practically at a standstill. Total production from the field is approximately 2,000 bbl. daily with Magnolia and Shell Oil Co., Inc., owning the bulk of the productive properties. Practically all of the wells in the field are pumped with electricity, current being either purchased or lease-generated.

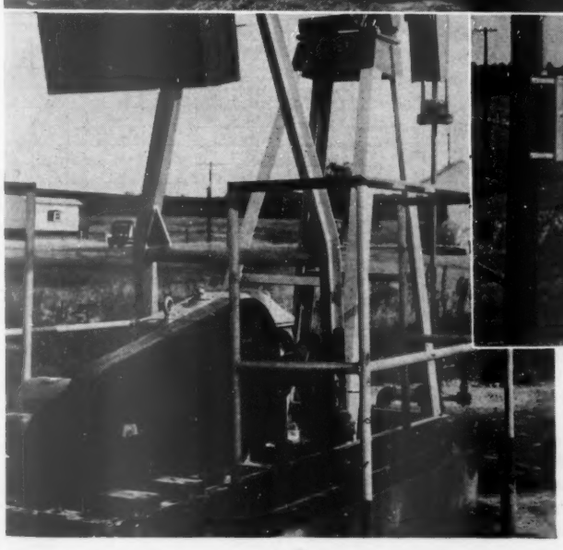
Loads of the individual wells vary widely and the length of the stroke, the strokes per minute, and the time the well is on the pump differ from well to well. This is mainly due to the characteristics of the producing horizon which has a tendency to shale out more or less from location to location.

Better wells on the leases owned by Magnolia and operated on current supplied by the central generating plant are pumped with 30-in. stroke, while the lighter wells are pumped with a 14-in. stroke. The number of strokes per minute varies from 12 to 20. All of the wells are equipped with ⅝-in. rods and 2-in. tubing, with part of them having plain and the remainder upset type. In all of the Magnolia wells 2-in. liner-type working barrels are used.

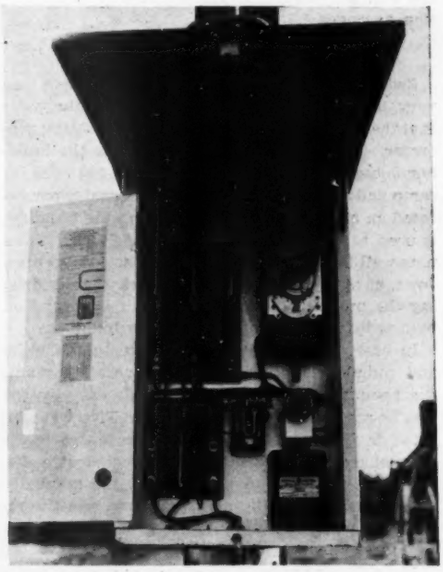
Each well is equipped with an individual pumping unit driven by an electric motor. On all but four of the wells the movers are 220-440 volt, 8.1-4.05 amp., 3-phase, 3-hp., 60-cycle, 1,675 r.p.m. induction-type motors capable of running continuously with a 50° temperature rise. Recently four wells in the north end of the field were supplied with single-phase 3-hp. motors. These wells operate on a short stroke and as low as 12 s.p.m.



Left: View of generating-plant exterior and two fuel tanks, each holding about 15 days' supply. Left, below: Twin-crank pumping unit being driven by a 3-hp. electric motor



Above: Transformer bank on pole close to generating plant steps up current for transmission to lease located about 2 miles away



Switchboard located on pole close to each well includes an electric clock for starting and stopping the pumping unit, a master switch and a special resistor switch which disconnects current in case the pump stalls

Generating Plant

The generating plant is as centrally located as possible to reduce the length of the transmission lines. Originally the plant was located in the center of the properties it was to supply with current, but a later extension of the field to the southwest made it necessary to install a separate primary circuit to nine wells on a lease in that area.

The internal-combustion engine and the generator are set on a concrete fundation and housed in a sheet-metal building which is well ventilated. Fuel tanks are located outside the building and there is a small tank for engine-cooling water in addition to the radiator on the engine. Switch board and controls for distributing the current are located inside the building.

The engine is a 6-cylinder diesel type with a rating of 125 hp. It is equipped with a friction clutch and drives the generator through a set of

eight V-belts. The 3-phase, 60-cycle, alternating-current generator has a capacity of 938 kva., 480 volts, 113 amp., at 1,200 r.p.m. Excitation circuit is provided with 125 volts and 10.3 amp.

The generating plant has run continuously for nearly 7,000 hours and during that time the cost of lifting the 850 bbl. of oil daily (1,000 bbl. fluid) has been approximately $4 for fuel and lubricating oil. The engine is equipped with an extra-large lubricating-oil filter and average consumption is 2 gal. daily; this includes the amount used in completely changing the oil in the crankcase every 4 days.

Crude oil is used for fuel in the engines, the oil being taken directly from the wells. However, it is thoroughly cleaned before being used in the engine. Two large settling tanks located outside the building are connected to the engine in a manner which permits fuel to be withdrawn from each tank separately. Each tank holds about 15 days' supply and as soon as it has been emptied it is refilled and allowed to set for at least 4 days before the fuel is used in the engine. A large double-compartment filter is located between the fuel tank and the engine and remaining foreign material in the fuel is removed at this point. Fuel consumption averages 1.5 bbl. daily.

Switchboard and Transformers

Switchboard and transforming equipment are very simple as the distribution to 37 of the wells is at the voltage and amperage delivered by the generator. One transformer, located inside the building, is used to step down the current to 110 volts for camp and office lighting. The other transformer, located on a pole a short distance from the building, is used to step up the voltage for delivery to the nine-well lease previously mentioned. It is stepped down at that point for use in electric motors driving the pumping units. This circuit is controlled by a switch located in the generator building.

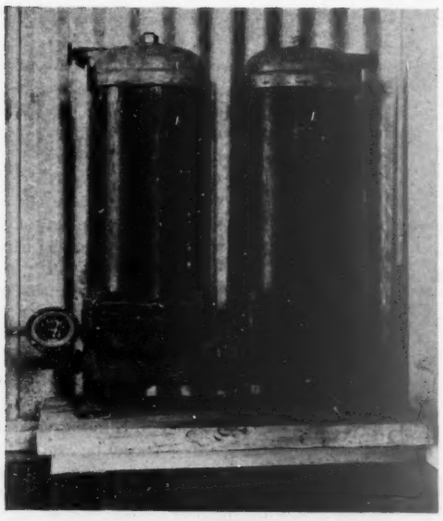
In case of interruption of service to the wells and complete shutdown of the generating plant, the resumption of pumping is made easy by the service-restoration system installed. Five wells located in the immediate vicinity are operated by manual controls, the nine wells located at a distance are put back to pumping by the manually operated switch in the plant building, and the remaining wells start pumping in groups of nine at 1-minute intervals.

The ability to pump such a large number of wells with a modest generating plant is due to a great extent to the staggered system of pumping, about one-third of the wells being idle while the remainder are being pumped. Some of the wells are pumped for 4-hour periods and are idle for 2 hours, while others are pumped 2½ hours and are off production for 1½ hours. The peak capacity of the plant is sufficient to pump all of the wells at one time in case it becomes necessary.

The pumping cycle is controlled by automatic time clocks located on the poles close to the pumping unit. These clocks may be set for any desired period of pumping followed by any desired period of idleness. Any number of the on-and-off periods are possible. In addition to the time switch and the main control switch, the boards located near the pumping units also include a special resistor switch, which automatically disconnects the circuit in case the pump stalls.

The clocks on the panels at the wells are operated by the electric current and in case the generator is allowed to run at a speed greater than normal, the progress of the pumping cycle will not proceed on schedule and the system will be overloaded at one period and underloaded at another.

To prevent this, a set of clocks is installed on the switchboard in the generating plant. One of the clocks is driven by the current coming from the generator and the other is driven by a spring and is a clock of first quality. Whenever the generator speed is increased or decreased the electric clock either runs fast or slow. If the electric clock gains or loses any appreciable amount, the generator can be adjusted accordingly. In actual operation this problem has presented only mild difficulties as the plant has been operated for long periods without any need of adjustment to the generator or the timing cycle.



Extra large double-compartment filter removes any foreign material from crude oil before it enters the fuel system on the engine

Suggested FIELD PRACTICES . . No. 12

Distortion of Sucker Rods Should Be Avoided When Pulling Stuck Pumps

By T. P. SANDERS

IN well-servicing work it is frequently necessary to know how much force can be applied to a string of sucker rods in attempting to pull a stuck pump or a stuck plunger. New pumps of the insert type often require a considerable force to release them from their anchoring devices. While the required force is nearly always within the stress limits of the sucker rods, it is usually reassuring to know that this is the case.

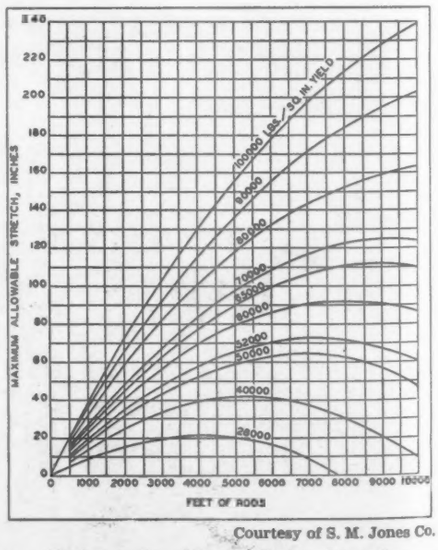
Some concerns employ a weight indicator on rod-and-tubing pulling units in order to measure the force applied to sucker rods. This represents the best available practice for avoiding sucker-rod distortion during well-servicing work, but in cases where a weight indicator is not available there is another method that can be employed with the same results. Since a force applied to the sucker-rod string will produce a given amount of rod stretch, depending on the yield strength of the steel, distortion can be avoided by limiting the rod stretch.

The accompanying chart shows the maximum allowable stretch for rod strings of all lengths. Knowing the minimum specified yield point of the particular type of rods in use, and knowing the length of the string, the allowable stretch is easily obtained from the chart. (Yield point of the sucker rods in use must be obtained from the manufacturers.) The chart applies to tapered strings as well as to strings of one size.

Example of Use

A pump or plunger is stuck and the operator wishes to determine whether or not it can be pulled without stretching the rods past their elastic limit. First, the elevator is raised sufficiently to take up the slack in the rods. It is usually possible to determine when the slack is out of the string, but in case it is not, it will be necessary to start measuring the stretch at a point where only part of the weight of the rods is being supported in order to be on the safe side. At this initial point the rod string is marked by tying a piece of string to the rod string opposite the ball nipple.

Assuming that the rod string in use is 6,500 ft. long and has a minimum yield point of 80,000 lb. per sq. in., it can be determined from the chart that the maximum allowable stretch is 138 in., or about 11½ ft. Force can therefore be applied to the string until the measured stretch at the surface equals this value obtained from the chart. If at this point the pump or plunger does not release, the operator can be satisfied that a tubing job will be necessary if rod damage is to be avoided.



Courtesy of S. M. Jones Co.

Maximum allowable stretch of sucker rods

QUESTIONS ON TECHNOLOGY

By W. L. NELSON, TECHNICAL EDITOR

W. L. NELSON

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to W. L. Nelson, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists, and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible. Inquiries must be signed but only the given initials will be printed. The source of the question is considered to be confidential.

Questions requiring a discussion of patents, extended computations, or a detailed study cannot be considered. When the matter is of general interest, a reply will be published within a reasonable time.

Job of Refinery or Chemical Engineer

I have had 1 year of college work and I am seriously considering changing to engineering because I am interested in petroleum refining. What sort of work does a refinery engineer do?—R. A. C., Jr.

To a large extent the technical staff in petroleum refineries is drawn from chemical engineers and chemist graduates as well as those who have studied petroleum refinery engineering. Only a few schools, such as the University of Tulsa, University of Pittsburg, University of Michigan, and Massachusetts Institute of Technology, give schedules that are at all complete. Other schools schedule courses in chemical engineering, which is the fundamental type of training that is required for refinery work. Thus, perhaps you should consider chemical engineering as well as petroleum refinery engineering.

The young graduate may be employed in several capacities. Prominent among these is the department of research and development. This department is concerned with the discovery and development of new processes; first in the laboratory, then in small-scale pilot plants, and finally in commercial equipment. After six or more months of experience in this department these men may be put in charge of special problems, design of process equipment, plant layout work, patent developments, or nontechnical duties.

Another avenue that is now widely employed is the trainee system used by many companies. In such a system the young graduate is moved about in the company gaining experience in the routine laboratory, in the research laboratory, in firing stills or boilers, in treating light and heavy oils, in clerical work, in the stockroom and in fact in all departments. Upon successful completion of such a program, the young engineer becomes a plant engineer who is an assistant or is in charge of some department such as cracking, oil treating, development, maintenance, or engineering design.

Finally, some graduates are employed by equipment manufacturers in the development, design, construction, and operation of plants and equipment that is sold to the industry. Many of these men are drafted from refinery organizations after several years of experience; and, conversely, men in the construction companies often find their way into refineries. Still a smaller group of graduates go into teaching, private consulting, and sales organizations.

Petroleum and chemical engineers are also employed in such related industries as petroleum production, natural-gasoline plant operation, and even in drilling oil wells in the preparation of drilling muds, water treating for boilers and water disposal, and the acidizing of oil wells.

An example of the various jobs that are being filled in the refining industry, is indicated by the following list which is taken directly from the records of one of the large oil companies:

Supervisor of costs and yields	1
Supervisor of plant processing	1
Junior engineers under plant processing	30
Supervisor of engineering	1
Design engineers	10
Manager of industrial relations	1
Assistant manager of research and development	1
Supervisor of economics	1
Economic analysts	6
Assistant supervisor of automotive department	1
Patent attorney	1
Technical salesman	1
Refinery superintendent	1
Inspection superintendent	1
Assistant inspectors	2
General superintendent of refining	1
Superintendent of gas and acid	1
Assistants in gas and acid departments	1
Assistants in light-oil treating	5
Assistants in heavy-oil treating	4

In addition to the 71 chemical or refinery engineers listed in the tabulation, 9 chemists were employed in executive positions and 35 as junior chemists.

The starting wage of the young chemist is $125-$160 per month with an average increase of about $200 per year of service. In 1920 only 145 research workers were employed in refineries whereas in 1938 over 5,000 were so employed in the industry.

An excellent survey of your question is given in Chemical and Metallurgical Engineering, Pages 416-422, June 1940.

Simplified Flow Diagrams

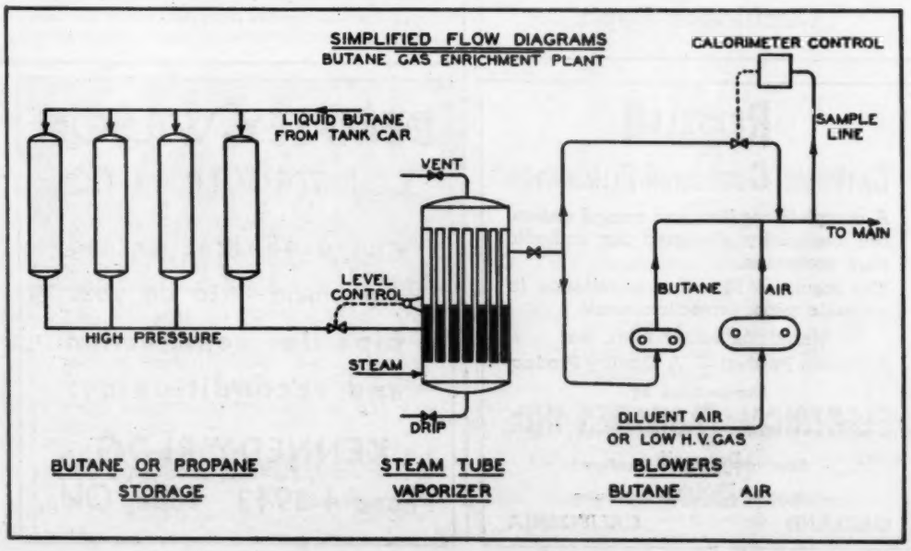
Gas-Enrichment Plant

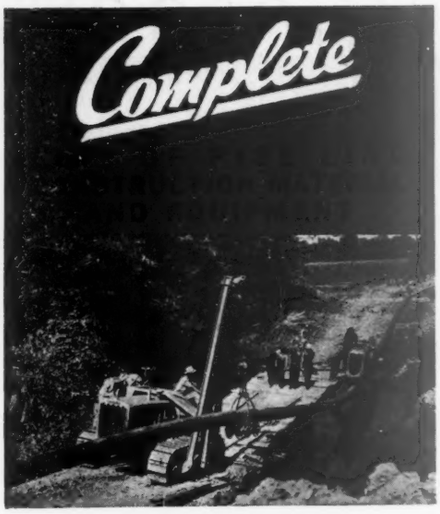
We have a franchise to supply gas to several small towns and our gas supply is failing. What type of equipment is required for gas enrichment by using butane? I understand that air can be used as a diluent agent. Does the use of air involve great danger of explosion?—M. G. R.

A flow diagram of a large butane (or propane) gas-enrichment plant is shown on this page, Butane has an extremely high heating value (3,260 B.t.u. per cu. ft.) and hence it can be diluted with two volumes of air and still have a heating value comparable to that of natural gas, or with five volumes of air and the mix will be as good as most manufactured city gas. The range of explosive mixtures is from 1.9 per cent to 8.5 per cent butane, and hence the mixture mentioned above will not explode. However, great care would have to be exercised in the enrichment plant to be sure that the mixture was uniform and that no low-percentage mixtures (under 10 or 12 per cent) were ever permitted to enter the line. In most situations the cost of liquid butane cannot exceed about 4 cents a gallon or the venture will be uneconomical.

The plant equipment is not complicated. It involves high-pressure storage, a steam-heated vaporizer operating a 10-lb. gage pressure, blowers for air and butane gases, and control mechanisms. The vapor pressure of butane is about 60 lb. per sq. in. at 100° F. and hence the storage tanks should be tested at 150 lb. per sq. in. or more. Propane would require storage tanks that have been tested for 400 lb. per sq. in.

Somewhat more simple plants can be arranged for small-scale operations but in any plant extreme care must be taken to see that a uniform gas mixture is produced.





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Pipe-Line Activity

Natural Gas Pipeline Contemplates Important Expansion of System

Economic studies for expanding main-line capacity are now being undertaken by Natural Gas Pipeline Co. of America. The company contemplates that this program will ultimately result in complete looping of the line from the Texas Panhandle to Chicago, where extensions will be made to other markets. At the present time plans are incomplete.

Last week a contract for 62 miles of 20-in. pipe was let to I. C. Little, Dallas, Tex. This line will run from Belvidere, Ill., to Milwaukee, Wis., completing the 162-mile, 20-in. lateral being built this year from Geneseo station on the company's main line to Chicago. I. C. Little is considering establishing headquarters at a point near Lake Geneva, Wis. Work will get under way September 25. It will be done by one spread consisting of one main-line gang, one river gang, and one road gang. I. C. Little will complete the looping work about September 20, which he has been carrying on this year for Panhandle Eastern Pipe Line Co. between Kansas and Illinois. This has consisted of 130 miles of line in several loops. Equipment used on this contract will be moved to the Milwaukee job.

Dempsey-Wilson Construction Co., which has the contract for laying 100 miles of 20-in. line for Natural Gas Pipeline Co. of America between Geneseo and Belvidere, Ill., had laid 11,000 ft. by the first of this week. The first day 2,200 ft. was laid; the second day 8,700 ft. was laid. At the beginning of this week pipe had been strung along 18 miles of line. The contractor is using a light ditcher and a heavy ditcher. H. C. Price Co. is doing the welding on this job. Dempsey-Wilson Construction Co. has recently finished a 10-mile loop laid for Tuscarora Oil Co., Ltd., in Pennsylvania.

Montana-Dakota Project Is Half Completed

Montana-Dakota Utilities Co.'s construction project is now more than half completed. This included the laying of 120 miles of 8-in. and 20 miles of 3-in. Construction has been contracted by W. A. Bechtel Co. Welding is being done by H. C. Price Co.

Latex Awarded Reconditioning Contracts by Texas and Gulf

HOUSTON, Tex.—Latex Construction Co. has received contract from Texas Pipe Line Co. for the taking up, reconditioning and relaying approximately 5½ miles of 6-in. pipe on the company's gas line from the Lafitte field, Jefferson Parish, Louisiana, to Marrero, on the Mississippi River across from New Orleans. In relaying, the section will be moved from 75 to 100 ft. back into the marshes from the bank of the bayou where it is now laid. The move is being made because of the steady washing back of the bank of the bayou.

Gulf Oil Corp. is taking up and reconditioning 11 miles of 8 and 10-in. pipe on its main system from Spindletop to Port Arthur, Jefferson County, Texas. Latex Construction Co. also has this contract.

Stanolind Completes Electra-K.M.A. Line

Construction work of the Stanolind Pipe Line Co. in the vicinity of K.M.A., Texas, has been completed. This consisted of lines extending the company's system from Electra, Tex., to serve the K.M.A. area. Part of the construction work was done by the company's own crews and part of it was contracted by O. C. Whitaker Co. At the present time Williams Brothers Corp. is taking up lines for Stanolind Pipe Line Co. between Alluwe and Collinsville, Okla. This consists of 3 miles of 4-in. and 21 miles of 6-in. This pipe is part of a line which was formerly in operation between Drumright and Vinita, Okla.

Magnolia Gasoline Line Is One-Quarter Finished

William Brothers Corp. has finished more than 50 miles of the 200-mile 4½-in. gasoline line being built for Magnolia Pipe Line Co. between the Magnolia refinery at Fort Worth, Tex., and Oklahoma City, Okla. Work is being done by two spreads and is proceeding at the rate of about 3 miles a day for each spread.

Transportation of Falls City Crude Is Studied

Several companies are studying the matter of transporting crude oil from the Falls City pool in southeastern Nebraska. Stanolind Crude Oil Purchasing Co. has been giving the matter attention. Stanolind Pipe Line Co. has a pumping station at Topeka, Kans., on the Wyoming trunk line. Union Pipe Line Co. of Centralia, Ill., has been making arrangements to install a pipe-line gathering system in the Falls City pool which would be used in connection with making shipments by rail to Minneapolis.

Bell Oil & Gas Co., Tulsa, has sent representatives into Nebraska and is considering laying a pipe line to serve the Falls City pool. The Bell organization has two representatives in the area; one is from the pipeline department and one is from the geological department. Samples of the crude are being sent to the Bell refinery at Grandfield, Okla., for analysis. This company is considering a short line to the railroad. Consideration is given to extending the line at a later date to connect to the trunk line of a major company at some distance from the field. Construction of such an

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Pipe-Line Personalities . . . . W. G. Hanrahan

W. G. HANRAHAN

W. G. HANRAHAN was born 49 years ago in Olean, N. Y. His association with the pipe-line industry started while he was yet a boy, when he began working for the Indiana Pipe Line Co. He came to Oklahoma in 1909 and got a job with Texas Pipe Line Co. From 1911 to 1916 he worked in Louisiana for the Gulf Pipe Line Co. and Standard Oil Co. of Louisiana.

In the latter year he returned to Oklahoma where he worked for the Oklahoma Natural Gas Co. and also contracted pipe lines in the Drumright field. Upon the entrance of the United States into the World War, Mr. Hanrahan joined the Medical Corps of the Army, serving at Fort Riley, Kansas. After his discharge he worked for a while with Sinclair Refining Co. He served two 4-year periods with J. B. Foster Oil Co. and Vacuum Oil Co., and in 1927 entered the oil business, leasing and trading oil and gas royalties until 1930. In that year he returned to the pipe-line construction business, becoming associated with T. R. Jones in the Oklahoma Contracting Co. until 1932. For a time after that he was with the American Petroleum Institute in the East Texas field.

In the fall of 1935, T. R. Jones and Mr. Hanrahan reorganized the Oklahoma Construction Co., and operated together until the fall of 1938 when the company was dissolved. Mr. Hanrahan then entered the pipe-line construction business alone as W. G. (Bill) Hanrahan.

He has three brothers connected with the Humble Pipe Line Co.: Ralph V., president; T. R., superintendent, Houston, and J. C., superintendent, Cisco. Two brothers, deceased, were formerly with the Texas Pipe Line Co.

extension would be dependent of course on the development of the pool and demand for production from this area. Bell operates gathering systems in southern Oklahoma and northern Texas, as well as in East Texas, the Texas Panhandle and Illinois.

Pacific Gas & Electric Awards Contract for Estuary Crossing

LOS ANGELES, Calif.—Pacific Bridge Co. has been awarded a contract by Pacific Gas & Electric Co., San Francisco, Calif., for the construction of a natural-gas transmission line across the Oakland estuary.

Oklahoma Natural Completes Crescent-Edmond Pipe Line

E. M. Campbell & Co. has recently completed 18.3 miles of 10-in. pipe between the Crescent pool and the Edmond, Okla., junction on one of the main lines of the company's system.

Enfield-Bridgeport Line Is Now in Operation

The 57-mile line built by Sheehan Pipe Line Construction Co. for Illinois Pipe Line Co. from Enfield to Bridgeport, Ill., is now in operation. This line consists of 43 miles of 10-in. between Bridgeport and Centerville and 14 miles of 8-in. between Centerville and Enfield. In addition to facilities at Enfield, a pumping station has been constructed at Centerville and the station at Bridgeport enlarged.

Continental Operates New Line From Hittle Pool

Continental Pipe Line Co. has completed and placed in operation a 10-mile 4-in. crude-oil pipe line which connects the Hittle pool, Cowley County, Kansas, with an 8-in. line which runs to the Continental refinery at Ponca City, Okla.

Socony-Vacuum Proceeds With Buffalo-Syracuse Line

O. C. Whitaker Co. is going ahead with the work of constructing a gasoline line for Socony-Vacuum Oil Co. between Buffalo and Syracuse, N. Y., consisting of 171 miles of 6-in. and 4-in. Construction work was held up last month as a result of difficulties encountered in obtaining permits to cross highways. The contractor has established an office at Canandaigua, N. Y.

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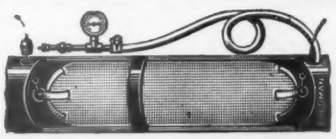

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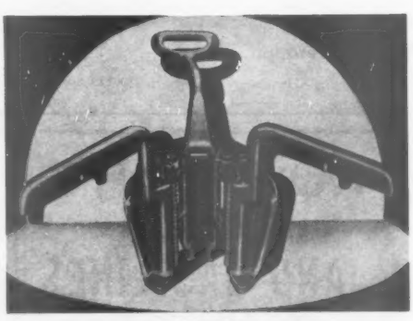

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FIELD DEVELOPMENTS...

HIGHLIGHTS FROM THE WEEK'S NEWS—

KANSAS—Outpost tests in the Iuka area, Pratt County, and Wilkins district, Ellsworth County, were showing oil in cores. Pool openers in Stafford and Phillips counties and an extension well in the South Sittner pool were completed. The Severy townsite play in Greenwood County is unabated, with several producers completed and as many new tests started.

OKLAHOMA—An outpost 1½ miles northwest of the Frederick field, Tillman County, opened a pool in pay at 5,638 ft. A new producing zone was uncovered on the east side of the Cement field, Caddo County. An oil strike on the edge of Weleetka, Okfuskee County, was expected to result in a townsite drilling campaign.

NORTH TEXAS—One of the most profitable weeks for some time in North Texas' Fort Worth basin wildcat play was marked with the discovery of new oil fields in both Clay and Montague counties. Both are from the deep lime found productive at other points throughout the basin.

WEST TEXAS—Crucial stages at many of West Texas' closely watched wildcat tests, together with indications of another test in the Waples-Platter extension area of the Bennett field in Yoakum County, held attention in West Texas.

LA-ARK-TEX—Wilcox sand development in northern Louisiana is causing excitement as wildcatting extends outward from the Olla field.

MICHIGAN—An 800-bbl. wildcat completion south of the Beaverton field in Gladwin County and a new gas field in Missaukee County greatly improve the picture in Michigan.

SOUTHEAST NEW MEXICO—A new oil discovery at a wildcat test was indicated in northwestern Lea County at the close of the past week. Casing has been set for a test of a section of sand from 3,025-35 ft.

EASTERN TEXAS—The wildcat play of eastern Texas received a great stimulation during the week past when a total of nine wildcats were either definitely staked or tentatively announced.

LOUISIANA GULF COAST—A 779-bbl. producer opened commercial production at the South Crowley prospect, Acadia Parish. A southeast flank test at old Welsh dome, Jefferson Davis Parish, attracts attention.

SOUTHWEST TEXAS—A scheduled production test of a well midway between the Minnie Bock and North Clara Driscoll fields, Nueces County, and the showings of two wildcats in San Patricio and Starr counties, featured developments.

TEXAS GULF COAST—Ogburn distillate field, Harris County, converted into an oil field by north extension well. Rowan field, Brazoria County, extended.

COMPLETIONS IN ALL FIELDS . . .

(Week Ended September 7, 1940)

	Oil	Gas	Dry	Total	1940 total comp. to date	1939 total comp. to date
N. Y., Pa., and W. Va.	98	10	5	113	4,251	2,488
Ohio	14	16	15	45	779	500
Indiana	5	1	6	12	300	192
Kentucky	12	7	2	21	314	488
Illinois	59	0	22	81	2,620	2,428
Michigan	9	3	7	19	804	982
Kansas	25	3	9	37	1,223	851
Oklahoma	12	5	8	25	1,236	1,240
Texas:						
North Central Texas	34	1	15	50	2,010	1,662
West Texas	29	0	1	30	1,305	1,219
Texas Panhandle	8	3	0	11	426	275
Eastern Texas	8	0	0	8	403	513
Gulf Coast Texas	17	0	1	18	879	935
Southwest Texas	34	0	10	44	1,522	1,733
Total Texas	130	4	27	161	6,537	6,337
North Louisiana	12	3	1	16	410	376
Gulf Coast Louisiana	11	0	2	13	719	460
Total Louisiana	23	3	3	29	1,129	836
Arkansas	4	0	0	4	129	184
Montana	5	1	1	7	145	117
Wyoming	1	0	0	1	107	95
Colorado	1	0	0	1	12	15
New Mexico	10	0	4	14	398	391
California	19	0	4	23	723	645
Miscellaneous	4	0	4	8	136	27
Total United States	431	53	117	601	20,843	17,793
Total previous week	397	42	117	556		
Week ended Sept. 9, 1939	376	46	105	527		

SUMMARY OF OUTSTANDING FIELDS . . .

(Week Ended September 7, 1940)

FIELD—	Active operations	Oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS					
Kilgore	39	6	3,784	1,442	31,601
Wasson	48	8	6,509	925	25,450
Ector County	47	9	7,916	2,261	45,750
Hull-Silk	37	4	1,929	340	6,110
Jones County	12	2	318	634	6,246
East Texas	16	5	650	25,998	374,897
OKLAHOMA					
Cumberland	8	0	0	4	2,000
Oklahoma City	12	0	8	837	102,650
KANSAS					
Bornholdt	18	1	350	113	3,160
Stoltenberg-Wilkins	15	4	827	108	1,820
Burnett	6	1	350	120	5,675
Trapp	14	1	283	571	10,450
LA-ARK-TEX					
Olla, La.	9	5	780	30	2,985
Cotton Valley, La.	4	0	0	163	13,800
MICHIGAN					
Adams	15	0	0	1	1,574
Hamilton	6	0	0	1	51
ILLINOIS					
Salem	58	10	2,858	2,277	165,887
Centralia	10	0	0	715	32,700
Louden	18	7	945	1,550	71,402
Other basin fields	233	42	10,588	2,413	96,493
Old fields	.....	....	.....	.....	11,201
NEW MEXICO					
Lea County	44	6	1,927	2,554	85,280
Eddy County	52	4	192	611	16,530
MISSISSIPPI					
Tinsley	11	4	2,065	76	27,020

By
L. P. STOCKMAN

New Field Near Mount Poso; Second in Sight at Newhall

LOS ANGELES, Calif., Sept. 9.—One new field was discovered in California this week and another appears to be on the verge of yielding its first commercial production. In addition to this, an outpost in the Inglewood field of Los Angeles Basin is scheduled for completion in a new deep zone within the next few days. The new field actually opened up this week was found by a joint wildcat of Signal Oil & Gas Co. and D. G. Vedder about 1 mile west of the southern tip of the Mount Poso field in Kern County. This discovery well, 1 Glide in 29-27-28, was completed pumping 200 bbl. of clean 16-gravity oil per day from the productive Vedder with bottom of the hole at 2,314 ft. No. 1 Glide is producing from 17 ft. of Vedder sand but even in spite of this relatively small penetration it is good for 400 bbl. per day. It is pumping 10 strokes per minute of 27-in. strokes and cleaned up within an hour following completion. Top of the productive Vedder was cored at 2,299 ft.

Pools in this immediate area in the east side of the San Joaquin Valley are generally along NW-SE fault traps and it is quite likely that 1 Glide will not prove to be an exception. The Vedder in this area can be expected to produce about 50,000 bbl. per acre from the Vedder but because of several wells drilled near 1 Glide this new field may prove to be rather limited in extent. Shell and Barnsdall holdings are located in the section south of that on which the new discovery was completed and should have several locations available for future work.

Potential Field

R. E. Havenstrite has concluded drilling operations on his 1 Lincoln in the Newhall district of Los Angeles County at 6,948 ft. and is at present running in liner preparatory to making a production test within the next day or two at the most. A satisfactory water shutoff was effected as not a single drop of water entered the tester on the water-shutoff test. This well appears certain to result in production although it remains to be seen whether it will require artificial stimulation or whether it will show a natural flow. It is characteristic of wells in this section of the basin to show low volumes of gas and consequently low gas-oil ratios. A total of 298 ft. of formation will be open to production and while several streaks of oil sand have been found at frequent intervals no thick sand body has been cored. Top of the three zones cored in this well correlate very favorably with similar zones in the Newhall-Potrero field where Barnsdall Oil Co. has completed a number of good producers during the past few years. The new area does not present as promising an oil sand as that found by Barnsdall Oil Co. but it does, however, present production possibilities.

New Deep Zone

The most important development from a drilling standpoint was the discovery of a new deep zone in the Inglewood field of Los Angeles Basin by R. R. Bush Oil Co. The deep-zone discovery well is 1 Sentous which is located on the south flank of the structure and outside the area proved up as productive in the upper zones. This new well is definitely assured of production and as is the case with R. E. Havenstrite 1 Lincoln in the Newhall district the only question undetermined is just how productive it will prove to be. Several hundred feet of oil sand and sandy shale have been cored between the casing point and bottom of the hole. Early this week while the crew was coming out of the hole the well began flowing at the rate of 1,000 bbl. per day of 32.5-gravity oil and about 1,000,000 cu. ft. of gas. This indicates that the well has exceptional productive possibilities, and a new deep zone will undoubtedly be proved productive in the Inglewood field before the close of another week as liner has already been run in and connections are being made with the gas trap and tanks.

Crude-Oil Production

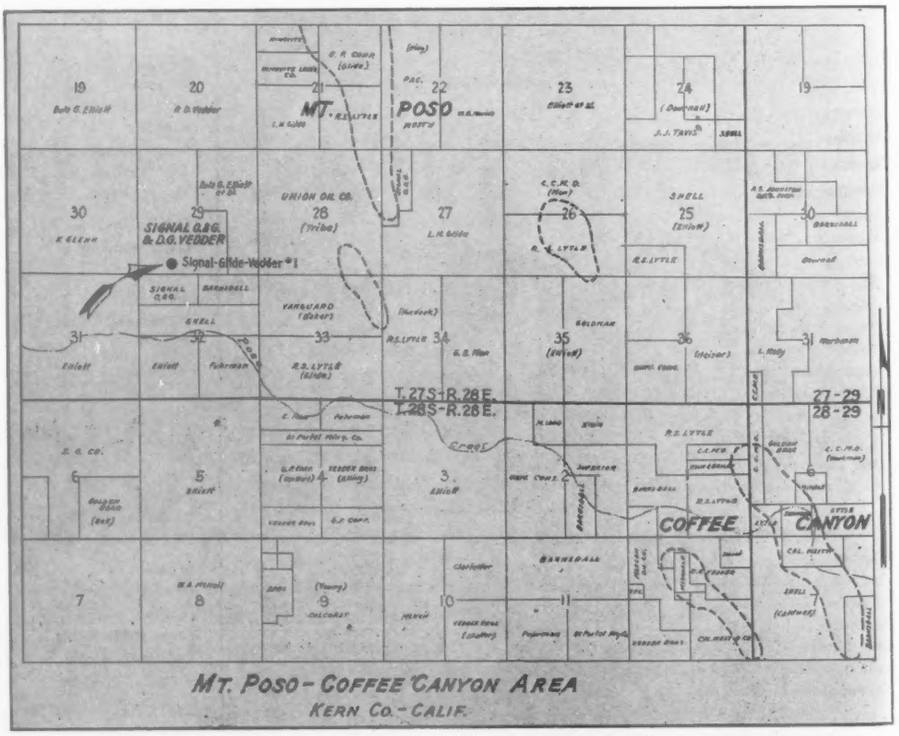
Crude-oil production which has been running substantially above the prescribed allowable for several months will probably continue above the allowable for the month of September but within another 30 days we may anticipate a substantial change in the curtailment program as compliance is expected to be more general. There are only a few fields and a relatively small number of operators that are out of line and steps are already under way to take up slack in order to secure complete compliance with curtailment in order to prevent chaotic conditions ahead. Those in close touch with conditions are afraid that exports to Japan may be discontinued without notice or the present market of California marketers so restricted that it will precipitate another of the state's periodic crises. The Conservation Committee of California Oil Producers, official curtailment group, and the conservator, L. P. St. Clair, are striving for strict compliance with curtailment in order to put stocks in a position so that the road will be relatively smooth over the next several months irrespective of what happens. Current daily production of leading California fields for the past week follows:

	Barrels
Wilmington	84,600
Midway-Sunset	58,250
Kettleman North Dome	47,250
Long Beach	42,850
Ventura Avenue	36,150
Coalinga	28,250
Huntington Beach	25,100
Dominguez	22,400
Rosecrans	13,300

LOS ANGELES BASIN

Completion of 1 Sentous in the Inglewood field of Los Angeles Basin next week will probably lead to the drilling of several offsets as might be expected but it may also lead to deep-zone exploitation by other operators in the field. It is quite probable that other operators having productive acreage in the Inglewood field as far as the upper zone is concerned would feel that they too would be entitled to complete one or more deep-zone wells if Bush and Standard succeed in doing so. This would involve in addition to Standard Oil Co. and R. R. Bush Oil Co., Hogan Petroleum Co., Tide Water Associated Oil Co., Texas Co., Baldwin Oil Co., Shell Oil Co., Inc., and Kettleman & Inglewood Corp. all of which have production in the upper zones at present. It is quite likely that some program will be worked out immediately after completion of 1 Sentous provided it shows substantial production. The Inglewood field is one of the few productive fields in Los Angeles Basin that has not been given a deep test at a high point structurally. This is because operators and landowners were desirous of preserving any deep zone production until a later date in the hope that the price received for royalty oil would be at a relatively high level. It has been generally believed that this field has one or more productive deeper zones and the discovery of R. R. Bush Oil Co. did not create much surprise when 1 Sentous found an oil sand.

Completion of 1 Lincoln of R. E. Havenstrite in the Newhall district and 1 Sentous in the Inglewood field will bring to a close a period of extended duration during which wildcat exploration in Los Angeles Basin has been unsuccessful. For the past several years, prospectors have been busily engaged in wildcat exploration in the San Joaquin Valley and at other parts of the state with the result that only a few well located wildcats have been drilled in southern



No. 1 Glide, a joint wildcat of Signal Oil & Gas Co. and D. G. Vedder, has found a new accumulation west of the southern tip of the Mount Poso field of Kern County and has been completed pumping 200 bbl. of clean 16-gravity oil daily from 2,314 ft. Most of these adjacent fields in the east side of the San Joaquin Valley are fault traps

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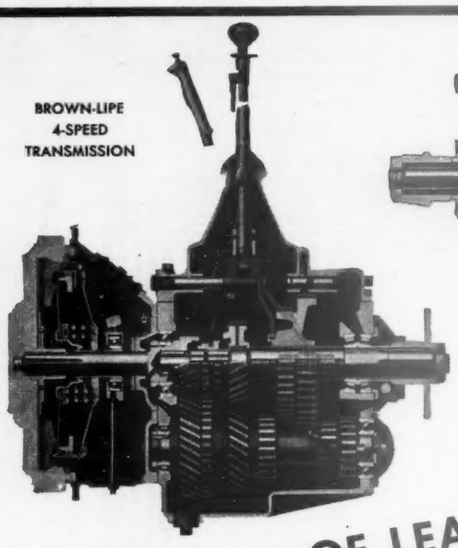
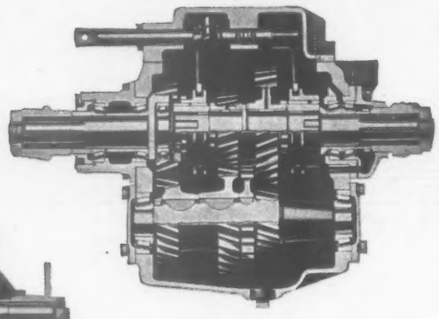


BROWN-LIPE 4-SPEED TRANSMISSION



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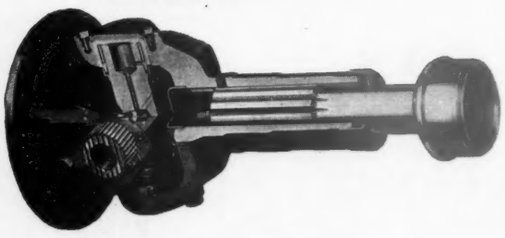

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California. There has for a long time been a feeling on the part of some prospectors that Los Angeles Basin does not present much possibility of discovering new productive fields. The present status of 1 Lincoln apparently removes this objection and may lead to more wildcat work in the Los Angeles Basin within the next year. Prospectors have also forgotten that El Rey Oil Co. has completed a well on the Westmore Land Co. lease northwest of the Athens section of the Rosecrans field and while this discovery well is only good for about 150 bbl. per day from 9,000 ft. it is logical to assume that additional work may result in discovery of a new major field. The oil sand found by this wildcat is not any stray oil sand that is restricted to this particular lease. Additional drilling has been slow in getting under way and for this reason it may be another year before the importance of this area may be determined.

LOS ANGELES BASIN COMPLETIONS

Aliso Canyon District

Continental 2 Howell 35-3n-16w
T.D. 5,422 ft., no oil showings from top to bottom, Los Angeles County.

Brea Olinda Field

Fullerton 26 Brea Canyon 2-3s-10w
Pumped 30 bbl., 17.1-gravity, 30 per cent cut, T.D. 3,517 ft., 1,056 ft. of 6⅝-in. liner 2,936 ft., cemented through perforations 2,765 ft., gun perf. 2,769-2,894 ft., Orange County.

Long Beach Field

Texas 6 Bauman 19-4s-12w
Pumped 132 bbl., 24.5-gravity, 28 per cent cut, T.D. 4,765 ft., 905 ft. of 5¾-in. liner 4,760 ft., perf. 3,838-4,760 ft., Los Angeles County.

Dormax 2 Signal 30-4s-12w
Pumped 60 bbl., 30.1-gravity, T.D. 5,232 ft., 2,140 ft. of 4¾-in. liner 5,216 ft, cemented through perforations, perf. 5,029-5,216 ft., Los Angeles County.

Rosecrans Field

Mission 1 Pierce 20-3s-13w
Flowed 35 bbl., 45.1-gravity, 4 per cent cut, 1,520,000 cu. ft. gas, T.D. 8,557 ft., P.B. 7,470 ft., 1,471 ft. of 4½-in. liner 8,539 ft., cemented throufh perforations 7,584 ft. and 8,402 ft., perf. 6,140-6,280 ft. and 8,404-8,539 ft., O'Dea zone, 3½ gal. natural gasoline per 1,000 cu. ft. gas, Los Angeles County.

Southern California 13 Maxwell 19-3s-13w
Flowed 364 bbl., 32-gravity, 2 per cent cut, 1,000,000 cu. ft. gas, T.D. 7,592 ft., O'Dea zone, 418 ft. of 4-in. liner 7,592 ft. and perf. 7,126-7,592 ft., 28/64-in. bean, pressures 360/295 lb., Los Angeles County.

Wilmington Field

Continental 13 L.A.C.F.C. 2-5s-13w
Flowed 313 bbl., 14.9-gravity, 1.8 per cent cut, 34/64-in. bean, Ranger zone, T.D. 3,140 ft., 407 ft. of 5½-in. liner 3,140 ft., perf. 2,750-3,140 ft., 3,103 ft. of 2½-in. tubing, packer 2,667 ft; located on west bank of Los Angeles County Flood Control Channel and bottomed beneath bed of channel to the east by directional drilling, Los Angeles County.

Fuller 1-A Community 32-4s-13w
Pumped 200 bbl., 17.4-gravity, 10 per cent cut, Ranger zone, T.D. 3,684 ft., 725 ft. of 5½-in. liner 3,683 ft., perf. 2,985-3,120 ft., 3,170-3,260 ft., and 3,379-3,683 ft., 3,774 ft. of 2½-in. tubing, packer 2,922 ft., Los Angeles County.

General Petroleum 18 Southern Pacific 3-5s-13w
Flowed 100 bbl., 15.1-gravity, 45 per cent cut, Ranger zone, T.D. 2,850 ft., 32/64-in. bean, 396 ft. gravel-wrapped liner 2,849 ft. and perf. 2,511-2,849 ft., Los Angeles County.

L. B. Oil Dev. 16-W 3-5s-13w
Flowed 1,608 bbl., multiple zone completion, T.D. 4,020 ft., P.B. 3,966 ft. Flowed: Ranger zone 158 bbl., 22.3-gravity, 4 per cent cut, 48/64-in. bean; upper Terminal zone 450 bbl., 26.7-gravity, 19/64-in. bean; lower Terminal zone 1,000 bbl., 30.1-gravity, 19/64-in. bean. Casing program: 11¾-in. cemented 2,619 ft.; 8⅝-in. landed 3,966 ft., cemented through perforations 3,096 ft., 3,586 ft. and 3,781 ft. Perf.: 2,610-2,851 ft., 3,096-3,191 ft., 3,221-3,481 ft., 3,586-3,686 ft., 3,781-3,835 ft., 3,871-3,956 ft., 5½-in. flow string 3,476 ft. with packer at 2,859 ft., 2½-in. tubing 3,912 ft. with packer at 3,491 ft., Los Angeles County.

Union Pacific R. R. 151 fee 3-5s-13w
Flowed 1,055 bbl., 30.9-gravity, pressures 410/490 lb., T.D. 4,010 ft., 1,665 ft. of 7-in. liner including 529 ft. of 5-in. cemented through perforations from 3,517 ft., perf. 3,519-3,613 ft., 3,638-3,669 ft., 3,695-3,779 ft., 3,794-3,843 ft., 3,863-3,914 ft., 3,924-48 ft. and 3,963-4,003 ft., Los Angeles County.

LOS ANGELES BASIN ABANDONMENTS

El Segundo Field

Rushti Pet. 4 El Segundo 12-3s-15w
T.D 7,099 ft. in schist basement, originally completed Nov. 26, 1937, flowing 479 bbl., 26.1-gravity, 3 per cent cut, 400,000 cu. ft. gas, Los Angeles County.

Long Beach

Mitchell, A. D., 1 Gem 13-4s-13w
T.D. 7,950 ft., originally completed Mar. 12, 1926, pumping 500 bbl., 25.8-gravity from 4,485 ft., deepened to 7,650 ft., Los Angeles County.

Torrance Field

C.C.M.O. 18 Del Amo 16-4s-4w
T.D. 4,535 ft., P.B. 4,467 ft., originally completed Feb. 10, 1937, pumping 30 bbl., 25.1-gravity; this is 1 of 15 former producing wells abandoned by this company in Torrance field during past 2 months, Los Angeles County.

LOS ANGELES BASIN DRILLING REPORT

Dominguez-Gardena District

Nevada Drlg. 1 Dom. estates 31-3s-13w
Drilling 3,415 ft., upper zone comprised all gray water sand, Los Angeles County.

Wood-Mellon 1 Wood.....31-3s-13w
T.D. 7,795 ft., P.B. 2,400 ft., redrilling at 4,160 ft., to test showings found in sixth Callender zone at 6,800-55 ft., Los Angeles County.

Inglewood District

Bush, R. R., 1 Sentous.....17-2s-14w
T.D. 8,760 ft., cored in oil sand and shale for past 250 ft., 7-in. casing landed 8,325 ft., water shut out effected satisfactorily, blew in flowing 1,000 bbl. oil and 1,000,000 cu. ft. gas rate per day, subsequently killed to run liner.

La Habra District

Security L. & W. 1 Security.....9-3s-10w
T.D. 4,678 ft. in sand and shale, top Repetto (lower Pliocene) 3,710 ft., no showings to date, Orange County.

Newhall District

Havenstrite 1 Lincoln.....16-4n-17w
T.D. 6,948 ft., casing for water shut off cemented at 6,650 ft., top lower Pico 5,242 ft., top Miocene 5,750 ft., top first San Francisco zone 6,036 ft., top second zone 6,180 ft., top third zone 6,650 ft., Los Angeles County.

Newhall-Potrero 1 Ferguson.....26-4n-17w
T.D. 7,756 ft. in sandy gray shale, core 7,654-59 ft. was gray sand, above top of Miocene and consequently more than 2,000 ft. lower structurally than Barnsdall wells in the Newhall-Potrero field, Los Angeles County.

Round Mountain

Sparton Drilling Co. had the misfortune to stick drill pipe in 1 Hiatt a wildcat in the Round Mountain district of Kern County in 32-28-29 at 2,089 ft. at a time when this well began looking very good. The company recovered all of the drill-pipe fish but left the core barrel in the bottom of the hole. Just previous to losing the fish the crew had cored the grit zone on bottom and since most wells in this area core the Vedder immediately below the grit zone the fish was lost at the critical point. Heavier equipment is at present being installed to facilitate recovery of the core barrel and to speed up drilling operations. This well has been a very interesting one because if it is completed as a commercial producer it will mean either an extension of the Round Mountain field or discovery of another fault trap south of Round Mountain. The latter theory appears more plausible especially since there is at least a full section, 640 acres, south and southeast of this well that has not been tested. The well drilled into a fault zone at 525 ft. but after passing out of the fault found the formation fairly uniform and easy to drill. Top of the Jewett zone was cored at 1,401 ft. and this zone which is usually productive when found in sufficient thickness above the productive Vedder contained good oil showings. These oil showings were especially good at 1,660-90 ft. but were not tested for production. The Round Mountain siltstone usually found above the Vedder zone was cored at 1,716 ft. which indicated the Vedder should have been found at about 1,800 ft. There was an apparent thickening in this interval because the Vedder was not logged until a depth of 2,089 ft. had been reached.

Trico Oil & Gas Co. with commendable perseverence has finally found the productive Vedder zone in 3 Coffee an outpost north of the Crestmont section of the Round Mountain district and should be ready to make a production test within another few days. This is the third well to be drilled in 8-28-29. It cored the productive Vedder zone at 1,367-1,400 ft. and has 6⅝-in. casing cemented at 1,367 ft. Nos. 1 and 2 found the Vedder gray and barren and were accordingly abandoned.

Cole's Levee—Tupman

Richfield Oil Corp. continues aggressively with development work in the Cole's Levee and Tupman fields of Kern County and at the close of the current week was running 15 strings of tools and had 8 additional derricks standing waiting for crews. This week the company completed 54-4-B Kern County Land in 4-31-25 flowing 690 bbl. of 46.1-gravity oil and 8,000,000 cu. ft. of gas per day from 9,630 ft. This well ran into trouble during the course of drilling but was finally finished as a commercial producing well. In the Tupman field, Richfield completed 36-29-A Kern County Land in 29-30-25 flowing 580 bbl. of clean 34.1-gravity oil and 500,000 cu. ft. of gas per day from a depth of 9,150 ft. In the Cole's Levee field, Ohio Oil Co. has concluded drilling operations on No. 10-F in 11-31-25 at 9,664 ft. and has a 7-in. water string cemented at 9,353 ft. Drilling operations in the Cole's Levee field is at present restricted to Ohio Oil Co., which discovered the field, and Richfield Oil Corp. and Standard Oil Co.

Coalinga

Amerada Petroleum Corp. has completed 1-17-B

(Continued on Page 86)

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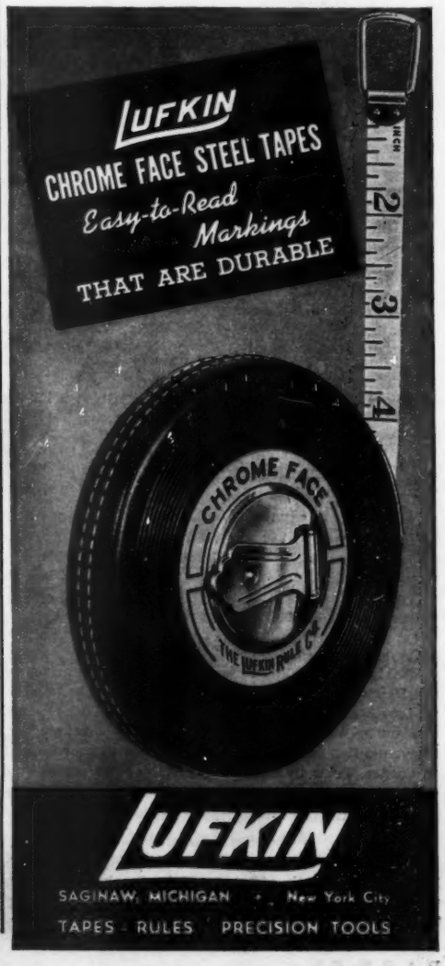


Garland Field Has Best Well In Week of Routine Activity

By T. R. INGRAM

DENVER, Colo., Sept. 9.—Colorado had one completion in Mountain Fuel Supply 2-A Kuykendall, Hiawatha field, which made 40 bbl. a day.

Best completion in Wyoming was in the Garland field in Ohio Oil 2 Anna Davis for 100 bbl. a day. Continental 1 Prigge, on the Montana side of Frannie field, is being completed as a producer and will extend the field across the line.

Cut Bank, in Montana, had four completions, all average wells. One gas well was completed in the Whitlash district, Liberty County, in Western Natural Gas 1 Wilson. Kevin-Sunburst had only one completion, a 60-bbl. well for B. A. S. Aronow.

New operations include a test in a fault block south of Garland field, in Wyoming, one in Lance Creek for the Ohio Oil Co., four in Cut Bank in Montana, a wildcat in the Prairie Rose district in Liberty County, and one in Kevin-Sunburst.

COLORADO

Garfield County

Joe T. Juhan 1 Clough ..... NW SE 22-6s-94w
Spudded and set 1 joint surface pipe, moving in 20-in.

Huerfano County

Ira E. Miller 1 Hamilton ..... SE SE NW 20-29s-67w
T.D. 1,606 ft., cleaning out. (Deep test east of La Veta.)

La Plata County

Nick Spatter 1-X Bryce ..... SW SW 31-33n-9w
T.D. 3,906 ft., cementing off caves.

Logan County

West Plains 1 Sheldon ..... SE NW SW 3-10n-55w
Drilling below 2,000 ft. after shutting off water with 10¾-in. at 1,736 ft.

Moffat County

Mountain Fuel Supply 2-A Kuykendall, SW NW SW 23-12n-100w, Hiawatha field, was completed for 40 bbl. a day through perforated 6⅝-in. casing from sand at 2,310-54 ft. Total depth is 2,584 ft., with the 6⅝-in. at 2,583 ft. Sand at 2,062-2,180 ft. carried water. There was a gas sand at 2,427-40 ft. and a water sand at 2,490-2,564 ft. Elevation, 7,152 ft. It showed no decline on second 24-hour test. Location is approximately 900 ft. south of 5-A Wilson, completed last June for 327 bbl. the first 24 hours. Last named has averaged around 350 bbl. daily since completion and pumping equipment with larger capacity is being installed.

Steamboat Springs Synd. 1 Sutton NE NE SW 1-5n-96w
Drilling 2,246 ft.
Texas 2 Wick ..... Lot 9, 10-4n-91w
Running 5½-in. to 4,555 ft.
Mountain Fuel Supply 6-B Wilson NW SE 14-12n-100w
Drilling below 1,438 ft. and preparing to core.

Ouray County

Ridgway Petroleum 1 Bennett ..... NE SE 2-45n-8w
Drilling 550 ft. in Benton shale.

Rio Blanco County

Buford Oil 1 Government ..... SW SW 16-1n-91w
T.D. 4,160 ft., landed 6¼-in. at 1,005 ft. and underreaming to set on bottom.
Texas-California 4 Unit ..... NW NW NW 2-2n-94w
Drlng 5,616 ft.
Raven Oil & Ref. 30 ..... SE NW NE 31-2n-102w
Drilling 525 ft. (Rangely field.)

Routt County

Craig-Moore 1-X Irwin ..... SW NE 33-7n-85w
Drilling in red beds 2,410 ft.
Mid-Colorado Pet. 1 Omholt ..... NE NE SE 29-4n-87w
Resumed at 3,150 ft. in Morrison. (Fish Creek.)

WYOMING

The hearings being conducted by representatives of the Department of the Interior on its claim to title on various tracts in the Lance Creek field filed upon years ago under the old placer mining laws continued at Cheyenne the past week and adjourned to be resumed at Casper. Prior to the hearings before the register of the land office at Cheyenne testimony was taken at Lusk.

Big Horn County

Ohio 3 Anna Davis, NW SW NW 34-56n-97w, Garland field, a south offset to Mule Creek 1 Sessions, was completed at 4,100 ft., total depth, after plugging back from 4,226 ft., for 100 bbl. a day through perforated 6⅝-in. at 4,085-95 ft., after acidizing with 500 gal.

N. R. Ketchersid is building rig for test in fault block in southern area of the Garland field in his 1 Mann. Location is approximately 750 ft. north of a test drilled in 1935 by the Peay Oil Co. which had a good show of oil but was abandoned on account of a bad hole. Objective is the light oil sands in the Frontier at around 3,250 ft.

N. B. Ketchersid 1 Mann SW cor. Lot 42-J, 11-55n-97w
Building rig. First report.
Prescott & Milieski 1 Government 1-51n-93w
Resumed at 1,190 ft., drilled to 1,325 ft. and S.D. for repairs.
Frank S. Scott 1 Robertson ..... SE SE SE 6-54n-93w
Drilling 865 ft. in Tensleep, top at 863 ft., 6⅝-in. at 787 ft.

Carbon County

Producers Oil 1 Lake Valley ..... CNL 14-20n-88w
T.D. 3,752 ft., changing over from cable tools to rotary.

Converse County

U. & I. Oil Synd. 1 Beaver ..... SE NW 29-35n-68w
T.D. 1,000 ft., underreaming pipe to bottom.

Crook County

Vickers-Continental 1 Duncan-Lobban ..... NE NW SW 28-57n-64w
Drilling 1,425 ft.

Fremont County

Pilot Oil 6 Enos ..... SE SE NE 21-3n-1w
Drilling 1,030 ft.
Sinclair-Wyoming 2-A Muskrat NW SE SW 34-34n-92w
T.D. 5,686 ft. (corrected), P.B. from Morrison and will test Frontier through casing perforated at 4,170-85 ft.

Lincoln County

Ella B. Newlon 1 Howard 18-25n-113w
Drilling 300 ft., contract depth 2,000 ft. South flank of La Barge field.
H. C. Harris 1 Government SE NW NW 23-21n-117w
Drilling 3,177 ft. in limestone.
Fontenelle Dev. 1 Pomroy ..... NE SW 5-24n-113w
S.D. 1,410 ft.
Robert Miller Taylor 1 State ... NE cor. 36-25½-115w
Drilling 2,053 ft.

Natrona County

General Petroleum 5-16-S ... NW NW SW 16-35n-77w
Location. Cole Creek field.
Iron Creek Oil 7 ..... SW NW 11-32n-82w
Drilling 720 ft.
Royalty Oil 1 Midert ..... SW SW SW 26-35n-80w
T.D. 1,555 ft., installing steel standard rig preparatory to underreaming 8-in. at 1,131 ft. to go to Wall Creek if necessary.
Lewis Gebhart 1 Government NW NE SE 10-39n-78w
Drilling 1,742 ft.
General Pet. 71-21-G ..... NE NE NE 21-35n-77w
T.D. 4,598 ft., testing.
General Pet. 7-22-P ..... NW SW SW 22-35n-77w
Drilling 1,168 ft.

Niobrara County

Lance Creek had one new operation in Ohio 3 State, an outside well on the east side and the second well to be drilled on the state lease. There were no completions.

Ohio 9 State ..... NW SW NW 36-36n-65w
Rigging up rotary. First report.
Argo 14-A Elliott ..... SE NW NW 5-35n-65w
Drilling 5,412 ft., cemented 7-in. at 5,361 ft., top second Lea 5,138 ft.
Argo 15-A Elliott ..... SE NE NE 6-35n-65w
Location.
Argo 9 Ford ..... SE NW SE 33-36n-65w
Rig, waiting on equipment.
A. B. Cobb 7 Novick ..... NW SE SW 6-35n-65w
T.D. 4,581 ft., fishing.
Continental 6 Apex-3 ..... SE NE NE 34-36n-65w
Coring and drilling at 5,316 ft., cemented 7-in. at 5,297 ft.
Continental 12 Rohlff ..... SW NW SW 32-36n-65w
Drilling 4,690 ft.
Continental 7 Apex-3 ..... SE SE NW 34-36n-65w
Drilling 4,962 ft.
Ohio 16 Putnam ..... SW SW NW 4-35n-65w
T.D. 5,529 ft., P.B. to 5,391 ft., rigging up to pump.
Ohio 17 Putnam ..... NW SE SW 33-36n-65w
Drilling 5,263 ft.
Ohio 17 Lamb-Acct. 1 ..... NW NW NE 5-35n-65w
T.D. 5,265 ft., running 7-in., Red marker at 4,910 ft.

Park County

Resolute 2 State ..... SW SW 16-57n-101w
T.D. 10,121 ft., Dakota at 9,725-35 ft., gas: Lakota at 10,010-40 ft., cemented 5-in. liner at 10,005 ft.

Sweetwater County

Farson Oil & Gas 1 Government SE NE 18-25n-108w
Drilling 925 ft.
Union Gas 1 Hummer .... NW NW NE 6-17n-103w
T.D. 2,110 ft., rigging up rotary.
Mountain Fuel Supply 1 Murphy SE SE SE 27-17n-104w
S.D. 4,156 ft.
Gus Pongratz et al 1 Clark .... NW NE 22-19n-104w
Drilling 3,965 ft.
Red Desert Corp. 1 Aspden .. NW SW NW 34-18n-103w
T.D. 3,970 ft. in Sundance, fighting lost circulation.
Vermilion Oil 2 Government SW SW SW 7-12n-99w
Drilling 3,258 ft., carrying 8⅝-in. at 2,995 ft.

Sublette County

Marvel 1-1 Government ..... SE NE SE 28-27n-113w
Cemented 10-in. at 463 ft.
Texas 1-F ..... SW SW SW 27-27n-113w
T.D. 1,084 ft., running tubing to test.
North La Barge Oil 1 Govt. .. CNL NE SW 21-27n-113w
Drilling 1,870 ft.

Uinta County

McCurdy-Morgan 1 ..... SE SW SW 32-19n-116w
Spudding 60 ft. (Cumberland district.)
Elynor Oil 1 ..... NE SE SE 6-18n-116w
Drilling 555 ft.

Washakie County

J. E. Longnecker 1 ..... CSL SW NE 24-47n-90w
Drilling 46 ft., 8¼-in. cemented 16 ft., show oil 44-46 ft. (Sherard structure.)

Weston County

Duluth-Wyoming 4 ..... SW SE 12-46n-64w
Running casing to top of sand at around 1,300 ft.
Riggs Oil 4 ..... CNL NE SE 16-46n-64w
Rigging up, will go to Sundance with cable tools.
Bert Higgins 5 ..... CNL NW SW 4-46n-63w
Drilling 220 ft., good show gas.
Joseph Dornacker 1 Kinney-Collins NW NE 33-45n-61w
Drilling 200 ft.
Lanam Crowley 1 ..... SW SW NW 8-46n-63w
Drilling 150 ft.
Charles Stough 12 ..... CWL SW NW 4-46n-63w
Drilling 157 ft.
Pierre La Fleishe 1 Dober ... NE NE NE 21-45n-63w
Drilling below 1,600 ft.
John Brorphy 1 Hansen ... NW NE NW 13-44n-63w
Drilling 1,400 ft.

MONTANA

The July production report of the Oil Conservation Board of Montana does not reflect any noticeable movement of crude to Canada during the month. The reported increase in exports will show up in the August report if there was any important movement. For July production, all fields, was 553,869 bbl., a decrease of 53,137 bbl. from June. Storage at the end of July was 1,400,901 bbl., a decrease of only 24,256 bbl. Exports to Canada were 7,987 bbl.

Big Horn County

Massey Oil & Gas 1 Government SE SW SE 11-2s-31e
Drilling 1,600 ft., no water so far.

Blaine County

Cherry Ridge Synd. 1 Harbolt NW NW SW 1-35n-20e
Drilling 1,140 ft., water and show of oil at 667 ft., cased off.

Carbon County

Prospects for extension of the productive area of the Frannie field across the Wyoming line into Montana are favorable in Continental 1 Prigge. It is showing saturation in the Embar-Tensleep and is preparing to test. It is about ½ mile northwest of nearest producer.

Continental 1 Prigge ..... SE SE SE 32-9s-25e
T.D. 3,562 ft., saturated cores at 3,522-61 ft., cemented 7-in. at 3,510 ft.

Garfield County

H. H. Schwartz, Jr., 1 Charles .... SE NW 21-15n-30e
Drilling 1,200 ft., flowing water from Mosby sand.

Glacier County

Cut Bank had four completions and four new operations.

R. C. Tarrant-Barnes 1 Butler, CEL NW SE 15-34n-6w, was completed at 2,982 ft., with 2,000 ft. of oil in the hole, but has not been tested. The Cut Bank was at 2,916-75 ft., with the main pay at 2,965-75 ft.

R. C. Tarrant 2 fee, NW NW SE 19-34n-5w, swabbed 90 bbl. the first 24 hours at 2,814 ft., total depth, from the Cut Bank sand at 2,790-2,814 ft., still in sand. Main pay was at 2,805-14 ft. Sunburst at 2,740-66 ft. was dry.

Texas 3 Unit 11, CWL SW NW 11-35n-6w, had 1,800 ft. of oil in the hole and swabbed 16 bbl. an hour at below 3,022 ft., total depth. Sand record not yet available.

Texas 3 Bonnett, NE SE 8-32n-5w, bailed only 15 gal. after standing 3 days at 3,015 ft., total depth. There was no lower Cut Bank. Upper Cut Bank was at 2,944-85 ft. It will be shot.

Glacier 2 Abraham ..... SW SW SE 19-34n-5w
Rigging up. First report.

(Continued on Page 87)

By
F. L. SINGLETON

Test May Link Minnie Bock, North Clara Driscoll Fields

CORPUS CHRISTI, Tex., Sept. 9.—Operators interested in developments of the Corpus Christi area of the Southwest Texas district were watching the outcome of a scheduled production test of Wellington 1 Howze which has shown promise of linking production of the Minnie Bock field with that of the North Clara Driscoll field, Nueces County. Sand showing gas was topped at 3,811 ft. and oil sand topped at 3,817 ft. was cored to a total depth of 3,827 ft. where 5½-in. casing was cemented on bottom. The well is located approximately 3,000 ft. south of the nearest production in the Minnie Bock field, and about 2,500 ft. north of the most northerly production in the North Clara Driscoll field. Production in the two fields is developed from the 3,800-ft. horizon. Location is in Section 56, Pauls subdivision of the Driscoll ranch.

In the same county and located about 1,500 ft. east of the nearest production on the east flank of the Stratton field, S. E. W. Oil Corp. 1 Union Central Life Insurance Co. was drilled to a total depth of 7,166 ft. with no further showings and 5½-in. casing was cemented at 7,156 ft. preparatory to testing a new sand section at 6,677-6,703 ft. where a recent drill-stem test recovered pipe-line oil. Location was made by the same company for 2 Union Central Life, 853 ft. east of the present well. Southern Minerals Corp. 3 Stratton is coring in shale below 6,700 ft. following a 11-minute drill-stem test at 6,578-90 ft. which tested 100 lb. working pressure and recovered 700 ft. of pipe-line oil.

Clara Driscoll Field

A new producer was marked up for the Clara Driscoll field, Nueces County, as Texas Conservative 1-B Flinn flowed 110 bbl. of oil on a 24-hour potential test flowing through a 9/64-in. choke. Tubing pressure was 810 lb. and casing pressure 1,400 lb. Drilled to a total depth of 5,453 ft. production was obtained by perforating casing at 5,408-12 ft. Location is in Section 110, Pauls subdivision of the Driscoll ranch.

In the East Flour Bluff field, Nueces County, Humble Oil & Refining Co. was preparing to complete its third producer, 2-D State. Broken sand and sandy shale with oil shows were logged at 6,770-78 ft. and at 6,787-92 ft. and casing is being cemented for completion after drilling to a total depth of 6,802 ft.

Location for another wildcat was announced for the Frio-Vicksburg sector of Jim Wells County, as material was being moved in for Henshaw Brothers et al 1 Joe Grossman, located 4 miles southeast of Orange Grove in Block 2 of the Dibrell, Soyars and Gallagher subdivision in the Casa Blanca grant. The well will be drilled to a depth of 6,000 ft. unless production is found at a lessor depth.

Madrone Field

The new producing area opened the previous week, 9,000 ft. east of the Driscoll field, Duval County, has been named the Madrone field. The discovery was made with the completion of Continental 1-B Driscoll, B.S.&F. Survey 481, which flowed 118 bbl. per day through a ½-in. choke. Tubing pressure was 60 lb. and casing pressure 640 lb. Gravity of the oil tested 23°, while a shakeout test at the separator showed the well to be making 2.2 per cent salt water. Production is from perforated casing at 2,530-35 ft.

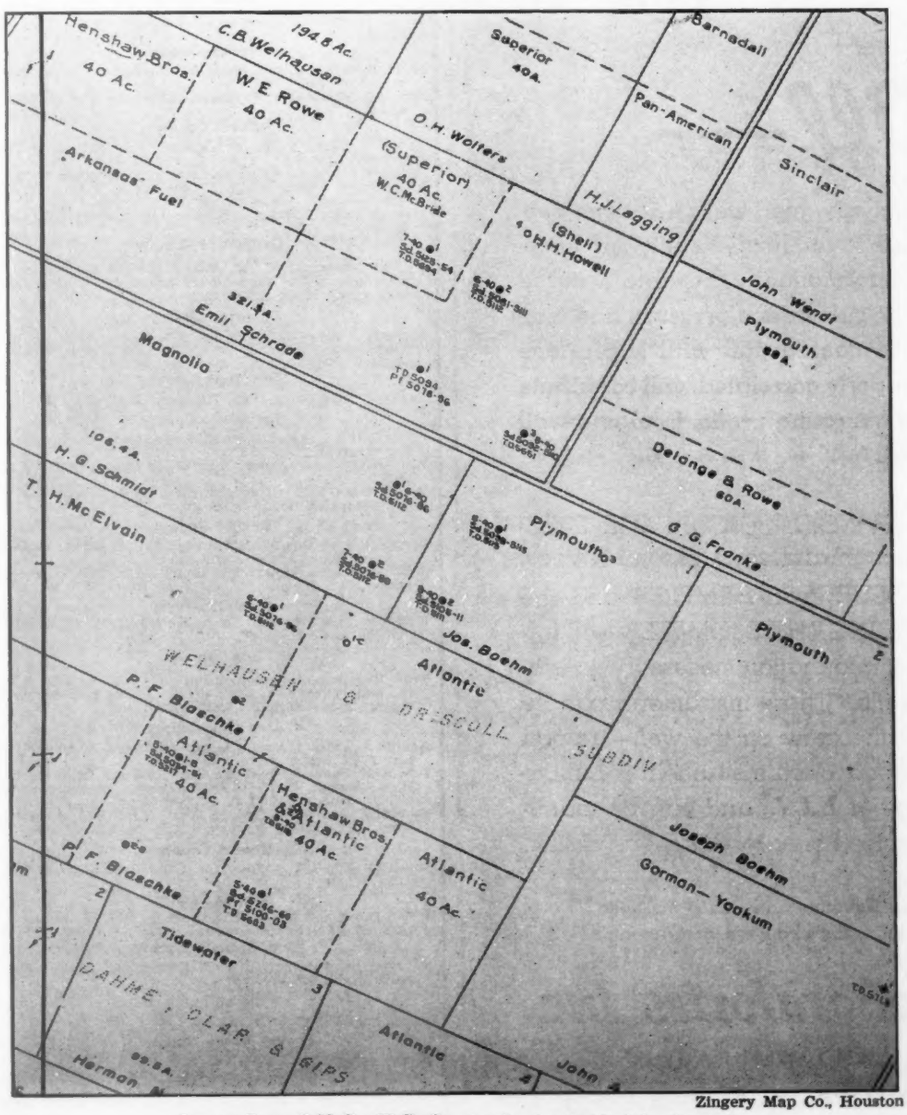
H. R. Cullen 1 Washburn, the discovery well of a new Wilcox pool located in the Fowlerton area, La Salle County, continues to be tested, and on a 24-hour gage ending at 9 a.m., September 4, the well flowed 98 bbl. of fluid of which 75 per cent was oil and 25 per cent salt water. The gage was made through a ⅝-in. choke and the tubing pressure varied from 50 to 250 lb., while the casing pressure varied from 450 to 650 lb. Prior to this test the well had flowed 440 bbl. of fluid in 5 days into a gun barrel tank. Basic sediment and salt water amounted to 12 per cent. Due to the showing of this well, leasing along this trend extending northeast, has been brisk and several large blocks are reported to have been assembled. Geophysical activity in the area has also shown a large increase.

Starr County Wildcat

Sun 1 Saenz, a wildcat located north of the North Rincon field in Starr County, showed definite promise of opening a new field as the result of a 10-minute drill-stem test at 4,994-99 ft. which tested 375 lb. working pressure and recovered 590 ft. of pipe-line oil. Several interesting showings have been logged up the hole, but due to bad recovery in cores and failure of the testing tool, no successful drill-stem test was made. The well is coring ahead below 5,315 ft. and casing is expected to be cemented for a production test within the next several days.

In the Balcones fault-line district and located in Atascosa County, W. J. Walton Drilling Co. is testing 1 Tuerpe, 7 miles southeast of Lytle. After recementing 7-in. casing at 2,403 ft., the hole was swabbed and some oil was recovered before mud and water broke in. The cement plug set at 2,582 ft. was found to have dropped down to 2,723 ft. After setting a second plug at 2,468 ft. the well tested salt water and the operators are preparing to test again after setting another plug at 2,450 ft. to shut off the water in the bottom of the hole.

In San Patricio County, and located northwest of the town of Gregory, Norsworthy Production 1 McDaniel is in shale below 5,600 ft. A 10-minute drill-stem test at 5,183½-89 ft. tested 240 lb. working pressure and recovered 20 ft. of gas-cut mud, while another test at 5,194-5,203 ft. recovered 40 stands of salt water in 30 minutes. Three attempts to test the top of the section from 5,172-79 ft. were unsuccessful. Location is in Lot 2, Block 9, Taft Farms Land subdivision in the J Crouch Survey.



Zingery Map Co., Houston

Orange Grove field, Jim Wells County, showing trend of developments

SOUTHWEST TEXAS COMPLETIONS
CORPUS CHRISTI DISTRICT

Jim Wells County

Orange Grove field: Atlantic 1-B Blaschke, 27 bbl. in 6 hr., ⅛-in. choke, perf. casing 5,053-55 ft., T.D. 5,127 ft.

McElvain 2 Blaschke, 130 bbl., ⅛-in. choke, perf.

casing 5,066-70 ft., T.D. 5,083 ft.
Wade City field: Rodney DeLange 13 McNeill, 295 bbl., ¼-in. choke, perf. casing 4,923-38 ft., T.D. 4,940 ft.
Rodney DeLange 20 McNeill, 227 bbl., ¼-in. choke, perf. casing 4,915-20 ft., T.D. 4,935 ft.

Nueces County

Agua Dulce field: Union Producing 1-A Driscoll, 20 bbl. distillate, 37,200,000 cu. ft. gas, perf. casing 6,786-6,808 ft., T.D. 7,200 ft.
Union Producing 2-B Sponberg, 35 bbl. distillate, 64,000,000 cu. ft. gas, perf. casing 6,495-6,515 ft., T.D. 7,100 ft.
Luby field: Stanolind 36 Spessard, 110 bbl., ⅛-in. choke, perf. casing 5,100-04 ft., T.D. 5,115 ft.
South Clara Driscoll field: Wellington 6 Richardson, 72 bbl., ¼-in. choke, perf. casing 5,370-5,405 ft., T.D. 5,774 ft.

Victoria County

Heyser field: Gulf 39 Traylor, 97 bbl., 3/32-in. choke, perf. casing 5,478-81 ft., T.D. 5,483 ft.
McFaddin field: Transwestern 15-F McFaddin, 32 bbl., 5/32-in. choke, T.D. 5,350 ft.
Wildcat: Titanic 1 T. C. Edwards, dry, T.D. 6,763 ft.

LAREDO DISTRICT

Brooks County

Kelsey field: Humble 69 McGill, 35 bbl., 9/64-in. choke, T.D. 4,727 ft.

Duval County

Bridwell field: Bridwell 1-B Rogers, 231 bbl., ½-in. choke, sand 4,319-25 ft., T.D. 4,325 ft.
Cedro Hill field: Magnolia 9 Duval County Ranch, 35 bbl., ⅝-in. choke, T.D. 1,458 ft.
Driscoll field: Continental 54-A Driscoll, 218 bbl., ¼-in. choke, perf. casing 3,323-29 ft., T.D. 3,330 ft.
Lundell field: Magnolia 6 Duvall County Ranch, 59 bbl., jetting sand, 1,550-56 ft., T.D. 1,556 ft.
Magnolia 7 Duval County Ranch, 30 bbl., jetting sand, 1,544-48 ft., T.D. 1,548 ft.
Wildcat: Sam Cunningham 1 John Dunn, dry, T.D. 4,512 ft.

Jim Hogg County

Colorado field: Humble 17 King, 88 bbl. in 12 hr., ½-in. choke, T.D. 3,003 ft.
V. F. Neuhaus 1-F Trevino, 250 bbl., ¼-in. choke, sand 2,946-62 ft., T.D. 2,962 ft.
Sun 6 Thaxton, 159 bbl., ½-in. choke, T.D. 2,991 ft.
Wildcat: Clopton & Schleyer 1 Yeager, dry, T.D. 3,615 ft.
Manila field: Adams & Lefervre 1-Wood, 168 bbl., ¼-in. choke, T.D. 2,626 ft.

Starr County

Rincon field: W. R. Davis 4-A Davenport, 95 bbl., ½-in. choke, perf. casing 4,090-4,120 ft., T.D. 4,291 ft.
W. R. Davis 33-B Slick, 198 bbl., ½-in. choke, T.D. 4,465 ft.
Sun field: Sun 3-B Speer, 138 bbl., 9/64-in. choke, perf. casing 4,932-35 ft., T.D. 5,132 ft.

Webb County

Adami field: Humble 9 Yeager, pumped 27 bbl. oil, plus 10 per cent salt water, T.D. 1,003 ft.
Humble 11 Yeager, pumped 27 bbl. oil, 7 per cent salt water, T.D. 1,006 ft.
Humble 12 Yeager, pumped 33 bbl. oil, 3 per cent salt water.
Glen field: House & Campbell 2 Bruni, 134 bbl., ⅝-in. choke, sand 2,152-63 ft., T.D. 2,163 ft.
Pitkin & Goldston 1 A. M. Bruni, 68 bbl., jetting, sand 2,173-83 ft., T.D. 2,183 ft.
Pitkin & Goldston 2 Bruni, 48 bbl., jetting, sand 2,192-95 ft., T.D. 2,195 ft.
West Cole field: Magnolia 8 Benavides, dry, T.D. 2,720 ft.

Zapata County

Wildcat: Dulup Oil Co. 2 Garza, dry, T.D. 1,694½ ft.
Hagan & Stewart 2 Martinez, dry, T.D. 1,502 ft.

SAN ANTONIO DISTRICT

Bastrop County

Wildcat: W. C. McGlothlin 1 Bell, dry, T.D. 3,196 ft.

Bell County

Wildcat: A. J. Maresh 1 Wentrcek, dry, T.D. 870 ft.

Medina County

Chicon Lake field: C. Wagener 51-A Medina Farms, pumped 3 bbl., sand 415-27 ft., T.D. 428 ft.
C. Wagener 21-A Medina Farms, pumped 1 bbl., sand 395-403 ft., T.D.
C. Wagener 5-A Medina Farms, pumped 2 bbl., sand 406-10 ft., T.D. 413 ft.

Williamson County

Thrall field: C. R. Bennett 2 Goetz, dry, T.D. 845 ft.
Wildcat: J. F. Crisell 1 Baker, dry, T.D. 540 ft.

SOUTHWEST TEXAS DRILLING REPORT

Bastrop County

August Bering 1 Rivers, B. Osborner Sur., S.D. 2,433 ft.
C. R. Franklin 1-A McDonald, Martha Barker Sur., drilling sandy shale 210 ft.
Fritz Fuchs 1 Kirksey, G. H. Glasscock Sur., S.D. 1,990 ft.
Ogden & Riddle 2-B Riddle, 1 mi. N of Riddle field, pumped est. 4 bbl. after P.B. to 1,970 ft., T.D. 2,017 ft.

Bell County

J. J. Cormas 1 Ellis, Elizabeth Berry Sur., S.D. 493 ft., lime.

Bexar County

H. L. Bedwell 1 Russell, F. Rodriguez Sur., T.D. 568 ft., S.D.

Brooks County

H. H. Howell 1 Cantu, Share 5-C La Almeda grant, drilling shale 7,055 ft.
Sun 1-X Boedeker, R. Guzman Sur. 16, drilling shale 6,570 ft.

Duval County

L. A. Douglas 1 Dinn, A.B.&M. Sur. 457, dry, T.D. 3,071 ft.
Humble 1-B Mull, NE of Realitos, drilling shale 4,115 ft.
Magnolia 2 Lopez, 7 mi. NE of Bruni, T.D. 3,327 ft., dry.
Gus Tsemelis 1 Rogers, Bridwell field area, T.D. 4,828 ft., dry.

Guadalupe County

Pat Armstrong 1 C. W. White, SE of Seguin, cored sand with slight show of oil 986-90 ft., drilling shale and sandy shale 1,300 ft.

Hidalgo County

Humble 1 American Life Ins. Co., Lot 1, Blk. 13, Missouri-Texas Land & Irrigation Co. subd., drilling shale 2,100 ft.

Jim Hogg County

Texas 1 Armstrong, Sur. 90, T.D. 3,687 ft., P.B.

Jim Wells County

H. R. Smith 1 Schumacher, George Reynolds Sur., drilling sandy shale 4,015 ft.
F. J. Hines 1 Lawrence, N of Wade City, T.D. 5,485 ft., dry.
W. R. Quin 1 E. C. Schumacher, J. Poitevent Sur. 1, drilling sandy shale 1,220 ft.

Kimble County

Austin Bridge Co. 1-A Wilkinson, T.D. 2,232 ft., broken lime oil show, set casing 1,835 ft.
Schwab et al 1 Baker, T.D. 2,626 ft., trying to cement casing.

Kenedy County

Hundred and One Oil Co. 1 Kenedy, SW of Mefflin, drilling shale 4,830 ft.

Lee County

Fred Pederson 1 Brown, Tanglewood area, T.D. 8,786 ft., 600 ft. of 4-in. liner cemented on bottom, perf. casing to test Travis Peak formation.

Live Oak County

Adams & Lyles 1 Alamo Lumber Co., NE of Fant City, Lot 231, coring shale 1,427 ft.
Edwin M. Jones 1-B George West, 2½ mi. W of George West, 3 min. D.S.T. 7,997-8,021 ft., T.D., recovered 400 ft. mud and 200 ft. salt water.
Edwin M. Jones 2-B George West, 5 mi. SW of George West, T.D. 3,626 ft., dry.

Nueces County

Southern Minerals 1 Bluntzer, Casa Blanca grant, T.D. 6,521 ft., dry.

Medina County

J. W. Duncan 1 Haby, T.D. 1,090 ft., 6⅝-in. casing at 1,065 ft., S.D.

San Patricio County

Norsworthy Production 1 McDaniel, J. Crouch Sur., drilling shale 5,550 ft.

Starr County

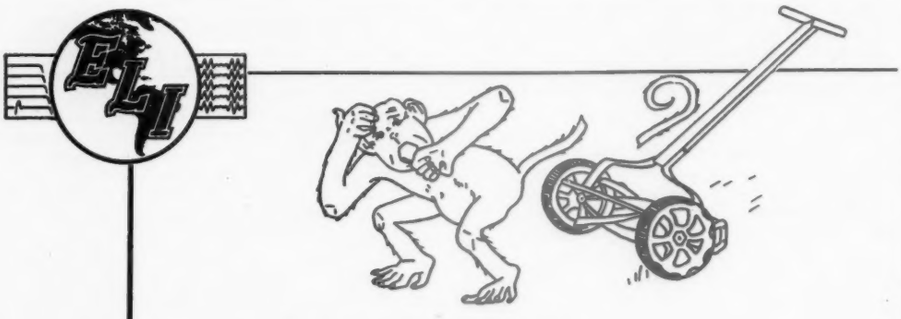
Sun 1 Saenz, Santos Bazan Sur. 80, coring 5,315 ft.

Val Verde County

Joiner et al 1 Clyde Sellers, S.D. 2,033 ft.

Wilson County

Walter Nelson 1 Platner, T. E. L. Parrott Sur 160, drilling sand 2,420 ft.
Texminn 1 McDaniel, 3 mi. E of Poth, S.D. 127 ft.



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MICHIGAN OPERATIONS

Michigan Adds New Oil Field And Gas Field To Its List

By OTTO C. PRESSPRICH

SAGINAW, Mich., Sept. 9.—An 800-bbl. wildcat completion 4 miles south of the Beaverton field in Gladwin County, announcement of the opening of a new Missaukee County gas field, and a disappointing showing for the first of the confirmatory completions in the Adams Arenac sector were highlights of Michigan oil and gas activities last week as the late spurt in drilling increased again.

The week's completions report was much more favorable than for several weeks past, nine new oil wells adding 1,900 bbl. to the state's daily potential production while three natural-gas well completions were good for about 18,000,000 cu. ft. a day. There were seven dry holes reported, including one natural-gas failure, and the play appeared definitely concentrated again on the Michigan basin area as the decline in southwestern Michigan fields continued.

Smith Petroleum Co. 1 Stone, ½ mile northeast of the Rayburn & Major Yenior discovery in Adams Arenac Section 14, missed the big pay, running some 22 ft. structurally lower, and being drilled through the Dundee into a second pay which was estimated good for around 15 bbl. a day. Testing continued as the week ended. Meanwhile Basin Oil Co. 4 Gustav Templin, in Section 23, was good for 55 bbl. a day, after acid treatment, at 2,978 ft.

Taggart Brothers, keeping their development secret for a month, revealed last week that they have opened a new natural-gas field near McBain in Missaukee County. The first test on their Quist lease in Section 22 gaged 7,000,000 cu. ft., it was reported, while the second, completed last week, is 36 Geeseman-Koster, about 1½ miles southwest, in Section 20, rated open flow of better than 5,500,000 cu. ft. a day in the Michigan stray. Both wells are in Riverside Township. The operators also expected a third test, 37 Jager et al, in Section 26, would be completed within a week.

Gladwin County shared the spotlight as M. F. Whitehill 1 R. Yager wildcat in 36-17n-2w, had a 45-hour run of nearly 1,400 bbl. from the Dundee at 3,841 ft. After acid, production was reported settled at about 35 bbl. a day in Sun Oil Co. 2 Cameron, Jr., south offset to the Grout Township discovery well. Sun also is starting the 1 Cameron, east offset.

The Wise pool in Isabella County recorded two good producers as McClanahan Oil Co. and Burke White 6 Nixon in 17-16-3, was rated at 375 bbl. a day, after acid, and Wicklund Development Co. 3 Leosh, in 8-16n-3, responded to acid with an increase in daily production to 161 bbl. Pure Oil Co. 6-B Embrey, in Section 3, of Broomfield, doing 70 bbl. after acid, was the third Isabella County completion of the week, while four other Wise wells were at varying stages, and Stewart Oil Co. was below 2,100 ft. on its 1 Weidman wildcat in Denver Township, some 3 miles south and east of the Wise field. Three Midland County tests also were active. Sun Oil Co. planned to deepen 1-A State-Winterfield in Section 35 of Winterfield, Clare County, the test originally being a Taggart Brothers gas test dry in the Michigan stray. Gulf Refining Co. was near the Dundee-Monroe with its 1 Streib, a wildcat in Section 14 of Surrey Township.

Dry holes last week included two wildcats in Oakland County, one in Brandon Township, the other in Springfield, another in Summerfield of Monroe, one in Byron of Kent. Small producers were completed in West Branch of Ogemaw and Tallmadge of Ottawa. Belvidere Oil Co. 1 Jorgensen, Home-Montcalm gas well, was the best in months in Michigan, flowing at 9,160,000 cu. ft. a day.

The spurt in new operations continued last week with the state Conservation Department issuing 26 drilling permits, 5 more than for the previous week, and the largest number in several months. The total for the year thus jumped to 758, the week's issue being divided 7 to Allegan County, 5 to Arenac, 3 to Van Buren, 2 to Clare, 1 each to Kent, Gladwin, Missaukee, Huron, Muskegon, Montcalm, Berrien, Tuscola, Isabella, and Osceola.

In the list were six permits for natural-gas tests, three in Arenac County, one to Osceola, another to Clare, the other to Missaukee. The Berrien, Gladwin, Huron, Montcalm, Muskegon, and one of the Van Buren permits were for wildcat wells.

Allegan County

Overisel Township: H. C. Nelson 1 H. J. and H. Kroeze, NE SW SW 9-4n-14w. 180 bbl., natural, T.D. 1,499 ft.
A. E. Kropprasch, Tr. 1 J. H. Hoffman, E½ NE SE 21-4n-14w. 160 bbl., acid, T.D. 1,500 ft.
Marian Jourie 1 fee, NE SE SE 29-4n-14w. Dry, T.D. 1,660 ft.
Salem Township: S. L. Thornley 1 D. H. Kulinsteaker, NE SW NW 10-4n-13w. Dry, T.D. 1,645 ft.

Arenac County

Adams Township: Basin Oil 4 Gustav Templin, SW NW SE 23-19n-3e. 55 bbl., acid, T.D. 2,978 ft.
Clayton Township: W. E. Ross 3 G. Dobler, NW NW 15-20n-4e. Gas test, dry, T.D. 1,256 ft.

Gladwin County

Beaverton Township: M. F. Whitehill 1 R. Yager, SE NW NE 36-17n-2w. 800 bbl., natural, T.D. 3,841 ft.

Isabella County

Broomfield Township: Pure Oil 6-B Embrey, NW SE NE 3-14n-6w, 70 bbl. acid, T.D. 3,608 ft.
Wise Township: J. V. Wicklund 3 William Loesh, SW SE SE 8-16n-3w, 161 bbl., acid, T.D. 3,715 ft.
McClanahan et al 6 L. Nixon, SE SW NE 17-16n-3w. 375 bbl., acid, T.D. 3,738 ft.

Kent County

Byron Township: Bell & Marks 1 S. Wolf, SE SW NW 30-5n-12w, dry, T.D. 1,753 ft.

(Continued on Page 83)

Photograph by Robert Yarnall Richie

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A DIVISION OF GENERAL AMERICAN TRANSPORTATION CORPORATION

Sherman Gas Well Extends Panhandle Field to North

By
R. MARNE SANFORD

MIDLAND, Tex., Sept. 9.—Several closely watched wildcats in the West Texas area neared initial points during the past week.

In Dawson County Magnolia Petroleum Co.'s wildcat on the Sandidge, Section 110, Block M, E.L.&R. Survey, 3 miles southeast of the Cedar Lake field, was reported to have topped the brown lime at 4,210 ft. This is said to be considerably low compared with producers in the Cedar Lake field. It was last reported drilling ahead below 4,325 ft.

Further development was in prospect for the Waples-Platter area in Yoakum County, just northeast of the Bennett sector. Sloan & Zook and T. N. Sloan 1 Waples-Platter, wildcat drilling in Section 565, Block D, Gibson Survey, ¾ mile northeast of Shell Oil Co., Inc.'s discovery well in the area, is swabbing an estimated 18 bbl. of fluid hourly, about 6 per cent being water, from a total depth of 5,297 ft. The test has been treated with 1,500 and 3,500 gal. of acid and an additional treatment of 5,000 gal. is planned. Should this test make a commercial producer, Shell Oil Co., Inc., is reported obligated to drill a test in the SE cor. Section 553, approximately 1¼ miles northwest of the Sloan & Zook and Sloan test.

In Terry County Denver Producing & Refining Co. was moving in materials for its wildcat on the Lewis tract, SE cor. Section 62, Block DD, Gibson Survey It is located 7 miles northwest of the town of Seagraves.

NORTHERN WEST TEXAS COMPLETIONS

(24-hour gage)

Gaines County

Wasson field: Continental A-50-4 Wasson, 1,209 bbl., 4,890-5,080 ft.
Seminole field: Magnolia 2-251 J. & J., 455 bbl., 5,144-5,294 ft.
Skelly 2 Mann, 735 bbl., 5,175-5,261 ft.
Cedar Lake field: Stanolind 3 American Warehouse, 74 bbl., 4,605-4,740 ft.

Hockley County

Slaughter field: Richardson 4 Slaughter, 889 bbl., 4,905-95 ft.

Scurry County

Sharon field: Coffield & Guthrie 2 Spears, 150 bbl., 2,171-2,343 ft.
Magnolia 1 Sterling, 180 bbl., 2,229-2,435 ft.

Yoakum County

Wasson field: Aloco 9-A Williams, 725 bbl., 4,869-5,204 ft.
Continental 4-A Stevens, 795 bbl., 4,910-5,040 ft.
Danvers 3 Willard, 547 bbl., 4,985-5,226 ft.
Denver 2 Whittenburg, 1,352 bbl., 4,885-5,100 ft.
Humble 3 Armstrong, 841 bbl., 4,885-5,110 ft.
Magnolia 19 Mahoney, 639 bbl., 5,030-5,185 ft.
Phillips 4 Dowden, 401 bbl., 4,950-5,065 ft.

DRILLING REPORT

Andrews County

Phillips 1 Embar, 60 ft. S line Sec. 31, Blk. 10, University Lands Sur., cored 4,146-58 ft., slight show oil, coring below 4,160 ft.

Dawson County

Magnolia 1 Sandidge, SE SE Sec. 22, Blk. 34, Twp. 4n, T.&P. Sur., drilling 4,475 ft.
Sloan & Zook 1 Sypert, SE SE Sec. 22, Blk. 34, Twp. 4n, T.&P. Sur., drilling 2,800 ft.

Howard County

C. T. McLaughlin 1 Pete Johnson, NE NE Sec. 34, Blk. 32, Twp. 1n, T.&P. Sur., S.D. 3,573 ft., preparing plug to abandon.

Stonewall County

Shell 1 J. D. Patterson, SW NW Sec. 393, Blk. D, H.&T.C. Sur., Ordovician test, T.D. 5,550 ft.

Yoakum County

Sloan & Zook 1 Waples-Platter, Sec. 565, Blk. 4, Gibson Sur., top Brown lime at 4,340 ft., slight show oil 5,240-60 ft., swabbing into pits, est. 18 bbl. fluid an hr., 4 per cent b.s. and w.

SOUTHERN WEST TEXAS

Winkler County's long active wildcat test, Gulf 136 O'Brien, 1½ miles southeast of the Halley field, has been officially completed as a small producer and may extend that area. Located in the SE cor. SW Section 11, Block F, G.&M.M.B.&A. Survey, the well gaged 8¼ bbl. of oil and 1¾ bbl. of water in 24 hours. The pay section was logged from 2,729 to 2,970 ft. and was shot with 660 qt. Further development for the extension area has not been indicated.

In the Soma area in Crockett County 40 acres changed hands for a consideration of $1,000 per acre and a new location was staked. Mudge Oil Co., Dallas, is reported to have paid $40,000 for the 40-acre tract in the S½ N½ NE Section 30, Block GG, Wilton Survey. The new location on the tract is ⅝ mile northeast of the discovery well which was completed in the 1,032-70-ft. level.

Definitely extending the Todd deep field of Crockett County a half mile to the west, Amerada Petroleum Corp. gaged its 1 Todd, Section 24, Block WX, G.C.&S.F. Survey, for 11 bbl. of oil the first hour after drilling plug. It is bottomed at 5,880 ft. and will be deepened farther into the pay before taking official gage.

Stanolind Oil & Gas Co. is deepening its 1-C Midland Farms, ¼ miles northeast of the North Cowden field, Ector County, in search of more prolific pay. The outpost, located in Section 35, Block 42, Township 2n, T.&P. Survey, swabbed 2½ bbl. of oil and 7½ bbl. of water in 5½ hours from a total depth of 4,845 ft. after a 2,000-gal. acid treatment. It was last reported below 4,868 ft.

Plymouth Oil Co.'s deep Ordovician wildcat on the Levy lands, SW cor. Section 104, Block 8, H.&G.N. Survey, south of the Netterville field, Pecos County, dry at a total depth of 4,072 ft., plugged back from a previous depth of 6,473 ft. At 4,072 ft. the hole was treated with 2,000 gal. of acid but only sulfur water was recovered on test.

Also in Pecos County, Taubert, McKee & Siemoneit Drilling Co.'s deep Ordovician projected test in Section 5½, Block 8, H.&G.N. Survey, had a gas blowout and caught fire during the week. The gas was struck at 3,150 ft. and was estimated from 1,000,000 to 1,500,000 cu. ft. daily. The fire resulted in only slight damage to the derrick floor and as the week closed drilling below 3,150 ft. was under way.

SOUTHERN WEST TEXAS COMPLETIONS

(24-hour gages)

Crockett County

Todd deep field: Continental 5 Todd, 1,828 bbl., 5,810-95 ft.

Ector County

Foster field: Arrow Drlg. 14 Foster, 886 bbl., 4,180-4,300 ft.
Goldsmith field: Phillips-Pure 7 Cowden, 3,940 bbl., 4,132-4,214 ft.
Gulf 306 Goldsmith, 715 bbl., 4,175-4,245 ft.
North Goldsmith field: Grisham-Hunter 1 Cowden, 100 bbl., new T.D. 4,445 ft.
Johnson field: Atlantic 2-D Johnson, 50 bbl., 4,100-4,250 ft.
Schermerhorn 9-B Johnson, 188 bbl., 4,025-4,300 ft.
Stanolind 1-D Johnson, 200 bbl., 4,175-4,323 ft.
North Cowden field: Barnsdall 16 Smith, 966 bbl., 4,120-4,220 ft.
Jordan field: Cities Service 5-C University, 871 bbl., 3,570-3,613 ft.

Pecos County

Wildcat: Plymouth 1 Levy, top anhydrite 830 ft., top salt 850 ft., top Yates sand 1,596 ft., base Permian lime 6,075 ft., dry at 8,473 ft.
Apco field: Magnolia 1 Masterson, new initial 423 bbl., new T.D. 4,661 ft.

Upton County

McElroy field: Gulf 43 Crier-McElroy, 1,533 bbl., 2,710-2,888 ft.
Gulf 224 McElroy, 3,474 bbl., 2,617-2,826 ft.

Ward County

Edwards, Moore & Donnelly 2 Bertner, 200 bbl., 1,831-93 ft.
Estes field: Gulf 137 Estes, 1,193 bbl., 2,431-2,695 ft.

Winkler County

Keystone field, Bashara & Sons 1-B fee, 390 bbl., 3,240-3,389 ft.
Wildcat: Gulf 130 O'Brien, 10 bbl., pumping, 2,729-2,970 ft.

DRILLING REPORT

Crane County

Gulf 1-F University, SE SE Sec. 22, Blk. 31, University Sur., drilling 4,960 ft.

Hudspeth County

Haymon Krupp 1 Briggs, Sec. 24, Blk. 73, Twp. 7, T.&P. Sur., 5½-in. casing cemented at 6,202 ft., T.D. 6,224 ft., testing water shutoff.

Crockett County

Moore Exploration and Olson Drilling 1 Couch, W. S. Piggs Sur., T.D. 1,080 ft., reaming casing.

Pecos County

S. D. Pattillo 1 Hoffman, SE NW Sec. 6, Blk. 141, T.&St.L. Sur., 2,000-ft. test, drilling 200 ft.
Taubert, McKee & Siemoneit 1 Crockett, SW Sec. 4½, Blk. 3, H.&T.C. Sur., set casing 2,905 ft., gas 3,150 ft., drilling 3,157 ft.

Presidio County

Wilcox 1 Conring, Sec. 102, Blk. 4, H.&T.C. Sur., S.D., casing 1,038 ft.
Wilcox 2 Jones-Coffield, Sec. 38, Blk. 34, H.&T.C. Sur., P.B. to 2,369 ft. from 2,399 ft., S.D.

Sutton County

Domain 1 G. S. Allison, SW NE Sec. 91, Blk. 9, T.W.& N.G. Sur., Ellenburger lime test, S.D. 1,098 ft.

Terrell County

H. H. Sides 1 Rose, Sec. 15, Blk. 148, T.&St.L. Sur., first report.

Upton County

Texas Pacific 1 Eddleman, SW NE Sec. 208, Blk. F, G.C.S.D.&R.G.N.G. Sur., 6⅝-in. casing set at 2,869 ft.
J. F. Slaughter 1 Porter, Sec. 184, Blk. E, C.C.S.D.& R.G.N.G. Sur., location.

Ward County

Fitzpatrick & Slack 1 Wilson, Sec. 145, Blk. 34, H.& T.C. Sur., 1¼ mi. SE of discovery gas well, moving in material.
Gulf 5 Wristen, Sec. 13, Blk. 5, H.&T.C. Sur., scheduled Ordovician test, top Ellenburger 9,022 ft., preparing to cut drill pipe near T.D. 9,187 ft. due to unobtainable fish at T.D.
Sinclair Prairie 1 Wirt Davis, 330 ft. NW, 2,310 ft. SW lines, Sec. 32, Blk. 4, H.&T.C. Sur., 3,500-ft. test, drilling 3,081 ft.

SOUTHEAST NEW MEXICO

HOBBS, N. M., Sept. 9.—A decided upturn in drilling activity was noted during the week in this district. There were eight new locations staked in the Eddy County fields and four in the Lea County fields. One old well in Lea County was being rigged up to drill deeper.

Two new wildcat locations in Eddy County are Dooley & Haynes 1 Martin, located in the SE NW 9-18-25, and Knox & Featherstone 1 Hatchett, located in the SE NE 14-20-26.

A new field discovery was in prospect as the week closed in Lea County. Great Western Producers 1-D State, located in 30-12s-32e, is bottomed at 3,035 ft. and sand showing both oil and salt water was encountered at 3,022-32 ft. After drilling the section, oil rose 1,000 ft. in the hole in 2 hours and a total of 2,100 ft. in 14 hours. The bottom 800 ft. of the fluid column is reported to have been salt water. Seven-inch casing has been cemented on top of the sand for a test of the section.

SOUTHEAST NEW MEXICO COMPLETIONS

(Week Sept. 1 to 7)
(24-hour gages)

Eddy County

Wildcat: Artesia Drlg. Co. 1 Hoffman, SE SE 14-17-24, dry but not plugged, 1,282 ft.
Red Lakes field: Johnson 1 Harbold, NE SE 26-17-27, dry but not plugged, 555 ft.
Leonard field: Stout 1 State, pumped 10 bbl., shot and acid., 2,940-76 ft.
High Lonesome field: Nolen 1 Hess, dry but not plugged, 3,163 ft.
Jackson field: Anderson 4 Root, SW NW 7-17-30, dry but not plugged, 815 ft.
Dayton field: Bassett, Birney et al 1 Platt, SW SW 26-18-26, flowed 3 bbl., shot, 930-1,125 ft. (old well drilled deeper).
Loco Hills field: Banner Oil 3 Miller, NE NW 5-18-29, 24 bbl., shot, 2,445-2,550 ft.
Shugart field: Addison Oil 3-A Ginsberg, NW NE 17-18-31, 104 bbl. in 15 hr. through casing, natural, 3,145-83 ft.

Lea County

Maljamar field: Cockburn 10-B Baish, NE NW 28-17-32, 125 bbl., shot, 3,744-3,805 ft.
Cockburn 11-B Baish, SW SE 27-17-32, 125 bbl., shot, 3,780-3,834 ft.
Cockburn 20-B Baish, NE NE 28-17-32, 150 bbl., shot, 3,780-3,845 ft.
Vacuum field: Drlg. & Exploration 1-L State, NW NE 30-17-35, 110 bbl., acid., 4,590-4,695 ft.
Penrose field: Rowan Drlg. Co. 2 Walden, NE NW 15-22-37, 42 bbl., acid., 3,646-3,712 ft.
Arrowhead field: Gulf 6-C Christmas, SE SE 18-22-37, 853 bbl. in 15 hr., natural, 3,665-3,740 ft.

(Continued on Page 82)

NORTH CENTRAL TEXAS

By R. MARNE SANFORD

Discoveries in North Texas As Play Gathers Momentum

WICHITA FALLS, Tex., Sept. 9.—Two new oil-field discoveries marked the past week's developments in the North Texas district. These were reported in both Clay and Montague counties, both from the deep lime called either the Caddo or Nocona lime throughout the area.

Clay County's strike was H. M. Horton and P. N. Wiggins, Jr. 1 W. I. Howard, Block 31, T. J. Belcher subdivision, about 3 miles south of the Halsell field in western Clay County. With casing set at 5,458 ft., the Caddo lime was drilled with saturation from 5,460 to 5,484 ft. Considerable oil showed on the pits when the section was drilled several weeks ago, however, it was at that time carried deeper. During the past week the hole was plugged back to 5,484 ft. and after treatment with 2,500 gal. of acid and using a 46-bbl. oil load, the well came in for a natural flow of 25 bbl. hourly through 2-in. tubing into the pits. As the week closed a separator and storage tanks were being installed for official gaging this week. The Halsell field to the north is producing from the 4,700-ft. level while about 6 miles south and in almost a direct line with the discovery and the Halsell field, the Burns field is producing from the 4,400-ft. level.

Montague County's important discovery was Hults & Owens 1 Tucker, Block 2638, T.E.&L. Survey, about 7 miles northwest of Bowie and in the southwestern part of the county. After drilling several shows of oil above 6,000 ft., all of which were believed sufficient for commercial production, the Nocona lime was drilled with saturation from 6,010 to 6,050 ft. Seven-inch casing was cemented with 750 sacks at 6,016 ft. and plug is not to be drilled until the latter part of this week. The completion of this test for a commercial producer will mark the farthest south extension of production in the Fort Worth basin. Wildcats in extreme southern Montague County and northern Wise County have both indicated production but as yet have not been completed.

Foard County's oil field opened several weeks ago by the Thomason Oil & Royalty Co. 1 Gamble, Section 314, Block A, H.&T.C. Survey, in the northeastern corner of the county, is being given its third test. The second producer for the area is being tested at Thomason-Huff-Wallace 1 Gamble, same section as the discovery. It has made heads of from 60 to 70 bbl. while cleaning out from 2,351-60 ft. The third test for the field is the discovery firm's 2 Gamble, 990 ft. east of the field opener which was completed from saturation from 2,345-69 ft.

An indicated discovery of 2 weeks ago in northeastern Archer County was an apparent failure at the close of the past week. It is C. W. Clark 1 Goldsmith, Block 6, South Anderson subdivision, 10 miles northwest of Olney. The Ellenburger lime was topped with shows of oil at 5,414 ft., however, drilling deeper to a total depth of 5,465 ft. did not reveal any consistent section of saturation. An electrical survey was being made of the hole with abandonment probable.

A Denton County wildcat, shut down for several weeks, was reported in line for deepening. It is Amon G. Carter 1 Allen, S. Westbrook Survey, northwest of Drop. Drilled to its contract depth of 4,010 ft. several weeks ago, it is reported being again rigged up for deepening to 7,500 ft.

NORTH TEXAS COMPLETIONS
(24-hour gages)

Archer County

Hull-Silk field: British American 3 Willson, 825 bbl., 4,618-4,792 ft.
Cox-Hamon 1 Nichols, 550 bbl., 4,354-4,428 ft.
Dorian 1 Willson, 544 bbl., 3,771-3,804 ft.
Bert Ligon 8 White, 10 bbl., 456-68 ft.
Olney field: Burns 5 Blewitt, 10 bbl., 1,465-76 ft.
Burns 2 Perkins, 10 bbl., 1,439-74 ft.
Anarene field: Panhandle Refg. 48 Green, 4 bbl., 1,117-23 ft.
Stipe 11 Justice, dry at 1,078 ft.
Stipe 12 Justice, abandoned location.

Baylor County

British American 1 England, dry at 2,591 ft.
Seymour field: British American 2 Cope, dry at 2,673 ft.
Wildcats: Prince 1 Farmer, dry at 3,132 ft.
Texas 1 Clements, dry at 1,541 ft.

Clay County

Halsell field: Bridwell Oil 2 Halsell, 747 bbl., 3,706-38 ft.
Thornberry field: Johnson & Kouri 1-A Taylor, 5 bbl., 288-97 ft.
Johnson & Kouri 1 Hunt; dry at 1,362 ft.
Norwood 8 Taylor, 10 bbl., 1,122-40 ft.
Norwood 9 Taylor, 10 bbl., 1,124-43 ft.
Sussex 11 Glasgow, junked at 200 ft.
Petrolia field: Horton 1 Brannon, dry at 1,902 ft.

Cooke County

Walnut Bend field: Sinclair Prairie 15 McGeorge, 967 bbl., 4,108-22 ft.
Muenster field: Hudspeth 9 Truebenbach, 25 bbl., 853-91 ft.

Jack County

Antelope field: Ben Wells 1 Carter, dry at 1,185 ft.

Montague County

Rogers & Rogers field: Anderson-Prichard 1 Barker, abandoned location.
Anderson-Prichard 1 Molsbee, abandoned location.
Nocona field: Claymount Oil 3 Bouldin, 10 bbl., 795-813 ft.
Seay field: Fain-McGaha 1 Spring, 2,760 bbl., 5,668-74 ft.
Omohundro 2 Seay, 603 bbl., 5,644-80 ft.
Benton & Holmes field: Mudge 1 Custers, 760 bbl., 3,429-77 ft.
Bonita field: Sinclair Prairie 2 Doty, dry, 6,975 ft.

Wichita County

K.M.A. field: Hammon 4 Hammon, 660 bbl., 3,971-4,040 ft.
Hammon 16 McCarty, 365 bbl., 3,598-3,840 ft.
Hanlon-Buchanan 20 Fassett-Tuttle, 440 bbl., 4,050-4,101 ft.
Omohundro 5 Love, 609 bbl., 3,873-4,066 ft.
Merrick 6 Jones, 680 bbl., 4,059-4,106 ft.
Venmex 13-A State, 1,030 bbl., 3,709-3,810 ft.
Electra field: Davis 8 Jones, dry, 635 ft.
Hammon 4-A Hammon, 41 bbl., 602-11 ft.
Texas 62 Ohnaker, 5 bbl., 1,020-40 ft.
Burkburnett: Bell O. & G. 12 Evans, abandoned location.

Wilbarger County

Wildcat: Herbert Oil 1 Peters, dry, 5,036 ft.

Young County

Newcastle field: Hill & Hill 1 Stewart, dry, 977 ft.
James field: Kay & Fultz 1 Shields, 460 bbl., 4,301-38 ft.
Markley field: King 7 Dailey, dry, 641 ft.
Graham field: Zweifel 1 Martin, 575 bbl., 3,875-3,995 ft.

NORTH TEXAS DRILLING REPORT

Archer County

Clark 1 Goldsmith, Blk. 6, S.A.R. Sur., drilling 5,259 ft.
British American 1 Wilson, Sec. 2, B.B.B.&C Sur., set 10-in. casing at 106 ft., top Ellenburger 5,414 ft., T.D. 5,465 ft., making electrical survey of hole.
Shell 1 Coleman, Lot 3, Blk. 74, A.T.N.C.L. Sur., drilling 2,240 ft.

Baylor County

Rogers & Lanfair 1 Howe, J. Lowe Sur., Abst. 572, drilling 2,050 ft.

Clay County

L. T. Burns 1 Calloway, Lot 9, Hopkins County School Lands Sur., Abst. 176, T.D. 5,356 ft., new contract depth 6,000 ft., rigging up rotary.
Frabor-Hodges 2 Kinder, Lot 17, Blk. 2, Clark & Plumb Sur., drilling 3,615 ft.
Horton & Wiggins 1 W. J. Howard, Blk. 31, T. J. Belcher Sur., drilled saturation 5,460-81 ft., D.S. test showed 40 ft. oil-cut mud, T.D. 5,604 ft., P.B. to 5,488 ft. and set 5½-in. casing 5,460 ft., flowing 10 to 12 bbl. an hr.
Omohundro 1 Kempner, Bosque County School Land, old T.D. 4,268 ft., drilling 4,400 ft.
Roberts, Lynch & Jones 1 Edwards, Blk. 40, Madison County School Lands Sur., 6,500-ft. test, drilling 4,800 ft.
Walter Gant 1 Stine, Sec. 25, H.&T.C. Sur., 6,000-ft. test; moving in material.

Denton County

Amon G. Carter 1 W. P. and A. P. Allen, S. Westbrook Sur., S.D. 4,000 ft., planning to drill deeper.
Harvey Bros. 1 Knox, R. Howard Sur., Abst. 542, old T.D. 1,357 ft., show oil 1,467-93 ft., set 6⅝-in. at 1,465 ft., drilled plug, show oil and gas, testing.

Grayson County

Texas Co. 1 Hutchinson, Samuel Stewart Sur., northeast corner of county, 7,500-ft. test, location.

Hardeman County

Norris & Gilbert 1 Robert Weekley, SW SE Sec. 87, Blk. 16, H.&T.C. Sur., show oil in lime 3,810 ft., drilled saturation 3,810-70 ft., show oil in lime 3,867-3,906 ft., S.D.

Jack County

R. A. Conkling 1 M. Hoofle, A. James Sur., Abst. 318 3 mi. south Antelope, 3,500-ft. test, drilling 2,450 ft.
Continental 1 Robertson, M. J. Swan Sur., Abst. 1650, 4,600-ft. test, drilling 3,940 ft.
Rathke Oil 1 Moseley, J. Harrison Sur., Abst. 259, drilling 2,015 ft.

Montague County

Walter Gant 1 Will Laird, R. T. Millard Sur., Abst. 470, 7 mi. west of Sunset, 6⅝-in. casing at 6,641 ft., T.D. 6,651 ft.
Hults & Owen 1 Tucker, NW cor. Sec. 2836, T.E.&L. Sur., slight show of oil 5,020-34 ft. and 5,210-26 ft., drilling saturation 6,010-50 ft., cemented casing 6,016 ft.
W. H. Peckham 1 Dr. Lawson, N. Kimbro Sur., Abst. 405, T.D. 6,113 ft., test showed only mud, S.D.
A. R. Dillard 1 Holland, M. Montalba Sur., 10-in. set at 375 ft., drilling saturation 5,505-13 ft., making D.S. test.
Seitz, Comegy & Seitz 1 Harris, B.B.B.&C. Sur., 10 mi. south of St. Jo, 6,000-ft. test, drilling 2,040 ft.

WEST CENTRAL TEXAS

FORT WORTH, Tex., Sept. 9.—A new shallow field was opened in the Bluff Creek area of western Shackelford County during the week, however, most of the West Central Texas district's drilling activity continues to be centered in the Novice field of Coleman County.

The shallow discovery was Hickok & Reynolds 1 A. J. Swenson, in the North Bluff Creek area. The test showed an estimated 25 bbl. of oil daily from saturation in sand at a total depth of 1,409 ft. A north offset to the discovery, same operator's No. 1 Morris, found an estimated 4,000,000 cu. ft. of gas in a sand at 1,231 ft. and was cementing casing to shut off the flow before deepening to the 1,400-ft. oil horizon.

In the Novice field of Coleman County Bradford & Robertson of Haskell made location for their No. 2 Morris, an east offset to the operator's No. 1 Morris and located 467 ft. from the south and east lines of the A. McFarland Survey 154. Three wells in the field have casing cemented on top of the sand and are preparing to drill into the pay, while two more are in the process of drilling.

Fisher County's wildcat staked several weeks ago by Lloyd A. Long on the Fred Mayberry lands 1¼ miles southeast of McCaulley, was looming as a discovery well. Saturation was topped at 3,010 ft. and the hole was reported filling about 3,000 ft. with oil each 12-hour period. It is located in the SE Section 56 H.T.&B. Survey, a half-mile south of a 3,324-ft. failure drilled in 1937 by Lloyd Long. The prospective discovery is about 6 miles southeast of the old Royston field.

WEST CENTRAL TEXAS COMPLETIONS
(24-hour gages)

Callahan County

Putnam field: Heist 2 Grisham, dry, 500 ft.
Hatchett field: Johnson 2 Hickman, 8 bbl., 439-46 ft.

Coleman County

Santa Ana field: Lone Star 1 Holt, 5,690,000 cu. ft. gas, 2,253-58 ft.
Novice field: States Oil 2 Coker, 252 bbl. in 16 hr., 3,549-81 ft.
Bradford & Robertson 2 Gillispie, 254 bbl., 3,552-86 ft.

Jones County

Reid field: Farrell 1 Reid, 50 bbl., 2,565-82 ft.
Lewis field: Omohundro 7 Adams, 268 bbl., 1,868-79 ft.

Shackelford County

Choate 1 Dyer, 15 bbl., 1,176-84 ft.
Hickok & Reynolds 1 Swenson, 8 bbl., 1,496-98 ft.

WEST CENTRAL TEXAS DRILLING REPORT

Callahan County

Merry Bros. & Perini 1 Yost, NW NW Sec. 18, Blk. 8, S.P. Sur., 3,200-ft. test, first report.
N. D. Gallagher 1 E. Grisson, SE part Sec. 2, Blk. 8, S.P. Sur., drilling 1,660 ft.

Coleman County

Stuard 1 Minear, E. V. Otaw Sur. 244, location.

Comanche County

C. D. Lane 1 H. W. Strout, 3,080 ft. from N. 2,200 ft. from E lines of E. D. Corbett Sur., Abst. 154, drilling 2,896 ft.

Eastland County

Dobbs Oil 1 Poe, Sec. 37, Blk. 3, H.&T.C. Sur., drilling 1,495 ft.

Fisher County

F. A. Stephenson 1 Maberry, SE SW Sec. 56, Blk. 1,

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H.&T.B. Sur., 3,400-ft. test, cored 3,285-3,302 ft., slight show oil at T.D.

Hamilton County

A. J. Caldwell 1 W. W. Jones, 1,002 ft from NE, 150 ft. from SE lines of W. H. Crowder Sur., S.D. 3,010 ft.

Jones County

Charter Oil 1 Nobles, B. Trevino Sur., drilling 1,545 ft.
J. C. Hunter 1 Strand, SW NE Sec. 5, Blk. 5, H.&T.C. Sur., first report.
Best 1 A. A. McDuff, 5,200 ft. S, 1,100 ft. E lines of J. J. Hughes Sur. 256, set 6⅝-in. casing at 2,040 ft., S.D. 2,315 ft.

Parker County

Brown & Gardner Bros. 1 Gilbert, T.&P. Sur., Abst 1958, casing set 3,905 ft., est. 500,000 cu. ft. gas and spray oil, slight show oil 4,405-15 ft., T.D. 4,800 ft., fishing tools.
C. Leidecker and William Holland 1 J. A. Boyd, NE NE of S 100 acres of A. J. Edwards Sur., 4,500-ft. test, S.D. 2,410 ft.

San Saba County

Three Widow's Oil 1 Ballard, NW cor. S½ Sec. 80, H. Behrenroth Sur. 506, 2,000-ft. test, first report.

Shackelford County

Tal Vez Oil 1 Dyer, Sec. 83, Blk. 12, T.&P. Sur., S.D. casing 780 ft.

Stephens County

Gourley & Fagg 1 Rogers, Sec. 28, Blk. 5, T.&P. Sur., drilling 3,720 ft.

Tarrant County

Hickey 1 Baltzelle, NE cor. William Scott Sur., T.D. 800 ft. (last report).

Taylor County

Ce-beth Oil 1 City of Abilene, south shore of Lake Abilene on city property, 4,000-ft. test, drilling 2,210 ft.
Sorrels 1 Young, SE Sec. 37, B.B.B.&C. Sur., 1,800-ft. test, drilling below 920 ft.

Permian Basin Fields

(Continued from Page 80)

SOUTHEAST NEW MEXICO COMPLETIONS
(Week Aug. 26 to 31)
(24-hour gages)

Eddy County

High Lonesome field: Butler & Horne 1 Iles, SE SW 17-16-29, dry but not plugged, 1,955 ft.
Jackson field: Premier Pet. 7-F Beeson, NE NE 31-17-30, 54 bbl., shot, 2,830-45 ft.
Aston & Fair 5-B State, SW SW 32-17-30, pumped 96 bbl., shot, 2,858-67 ft.
Wildcat: May Weathers 1 Flood, SE SE 24-18-23, dry, 1,740 ft.
Loco Hills field: H. W. Martin 2 Gates, NW NW 23-18-30, dry, 3,285 ft.

Lea County

Vacuum field: Magnolia 73 State-Bridges, SW NE 13-17-32, flowed 217 bbl., shot, 4,664-4,716 ft.
Penrose field: Gulf 1 Mark, NW NE 3-22-31, pumped 25 bbl., acid, and shot, 3,670-3,735 ft.
Mid-Continent 2 Owen, NE NW 3-22-30, pumped 15 bbl., acid, and shot, 3,610-3,740 ft.
Penrose & Clower 1-B Walden, NW SW 15-22-37, 204 bbl., shot, 3,617-3,738 ft.
Rowan Drlg. 1-B Elliott, SE SE 29-22-37, 52 bbl., shot, 3,535-3,629 ft.

SOUTHEAST NEW MEXICO DRILLING REPORT

Chaves County

Roxana 1 Franks ..... NW NW 17-9s-25e
16 mi. NE of Roswell, location.
Roxana 1 Maull ..... NE NW 11-12s-25e
Material on ground.
H. Steinberger 1 Headley ..... NW SW 26-14s-29e
Rigging up cable tools.
Martin 1 Stephens ..... NW NE 22-15-29
Old failure drilling deeper, S.D. 2,340 ft.

Dona Ana County

Armstrong 1 Baker ..... NW SW 4-23-1
S.D., casing 40 ft.

Eddy County

Dooley & Haynes 1 Martin ..... SE NW 9-18-25
First report.
Knox & Featherstone 1 Hatchett ..... SW NE 14-20-26
First report.
Beddingfield & Walker 1 Seale ..... SE SE 10-20-27
S.D. 969 ft.
Talmadge 1 State ..... SW NE 24-16-28
Drilling 2,605 ft., slight show oil 2,505-15 ft.
Jones & Yates 1 Everest ..... NE SE 15-18-26
Drilling 727 ft.
Trojan 1 Grant ..... SW NE 33-20-25
Reaming casing to 1,500 ft.
Shumacher 1 Levers ..... NE NE 33-16-29
S.I. 2,875 ft.
M. Yates 1 Williams ..... NE NW 25-18-26
Location.
Black & Ratliff 1 Simmons ..... SE NW 9-21-25
Drilling 608 ft.
A. & M. Petroleum 2 State ..... NW SE 15-21-17
S.D. 350 ft.
Clark & LaNeve 1 Boulter ..... SE NW 28-19-27
Moving in cable tools.

Lea County

Stanley & Weiner 1 Saunders ..... NE NE 20-21-38
Drilling 2,580 ft.
Venture Oil 1 Lowe ..... SW SE 26-13s-37e
6,000-ft. test, T.D. 6,000 ft., S.D.
Great Western Prod. 1-D State ..... SE SE 30-12-32
T.D. 3,032 ft., slight show oil and salt water from 3,022-32 ft.

Otero County

R. H. Ernest 1 Located Land Co. ..... SE SE 20-25-7
S.D. 3,729 ft.

TEXAS PANHANDLE

AMARILLO, Tex., Sept. 9.—A new gas field has been definitely opened in Sherman County, in the Panhan-

dle area, about due north of the Sunray area of northern Moore County. The discovery is I.T.I.O. 1-A Bryant, located in Section 369, Block 1-T, T.&N.O. Survey. The hole was originally drilled to a total depth of 5,138 ft. in search of oil but was plugged back to 3,343 ft. where the well made 33,000,000 cu. ft. of gas daily from a lime section from 2,868 to 3,343 ft.

During the week there were eight new oil wells gaged in the district and three new gas wells. The new gas potential, including the new discovery, amounts to 80,400,000 cu. ft. daily while the oil initials total 1,442 bbl. daily.

TEXAS PANHANDLE COMPLETIONS
(Week Sept. 1 to 7)
(24-hour gages)

Carson County

Cities Service 3 Magnolia, 221 bbl., 3,150-78 ft.
Gulf 30 Cooper, 246 bbl., 3,123-65 ft.
Hagy, Harrington & Marsh 1 Haiduk, 33,600,000 cu. ft. gas, 2,500-2,714 ft.
Magnolia 87 fee No. 244, 129 bbl., 3,020-3,112 ft.
Texoma 3-T Burnett, 13,800,000 cu. ft. gas, 2,115-2,387 ft.

Gray County

Gulf 5 Merten, 129 bbl., 3,250-96 ft.
Southern Pet. Expl. 3 Archer, 55 bbl., 3,174-3,294 ft.

Hutchinson County

Buck Oil 3 Jamison, 85 bbl., 2,830-68 ft.
Travelers Oil 10 Haile, 309 bbl., 2,980-3,043 ft.
Skelly 5 Watkins, 268 bbl., 2,812-90 ft.

Sherman County

Wildcat: I.T.I.O. 1-A Bryant, Sec. 369, Blk. 1-T, T.&N.O. Sur., 33,000,000 cu. ft. gas, lime 2,868-3,343 ft., T.D. 5,138 ft., P.B. to 3,343 ft.

TEXAS PANHANDLE COMPLETIONS
(Week Aug. 26 to 31)
(24-hour gages)

Carson County

Texas 15-E Cooper, 413 bbl., 3,035-3,140 ft.
Texas 14 Quinn, 560 bbl., 3,010-3,105 ft.

Gray County

Magnolia 6-B Saunders, 35 bbl., 2,925-54 ft.
Stanolind 11 Hood, 221 bbl., 2,980-3,104 ft.
Cities Service 4 Worley, 77 bbl., 3,040-3,102 ft.
Magnolia 25-B Mertzon, 57 bbl., 3,050-3,135 ft.

Hutchinson County

Texas 30 Pond, 519 bbl., 2,825-2,951 ft.
Texas 10 Moore, 232 bbl., 2,955-3,010 ft.

DRILLING REPORT

Childress County

Texas 1 P. B. Smith, NW NW Sec. 97, Blk. 9, H.&G.N Sur., 7,500-ft. contract, drilling 4,986 ft.

Cottle County

Ramsey Pet., 1 Lynch, SE SW Sec. 66, J. Poitevent Sur., 5,500-ft. test, first report.

Sherman County

I. T. I. O. 1 Bryan, C NW Sec. 369, Blk. T-1, T.&N.O. Sur., P.B. to 3,350 ft., to complete as gas well, prepare to complete for 37,000,000 cu. ft. gas, T.D. 5,138 ft., S.D.

Swisher County

Krupp-Flaherty 1 Kleen, Sec. 120, Blk. 10-M, 6,500-ft. test, top salt 1,020 ft., drilling 1,575 ft.

Michigan Fields

(Continued from Page 79)

Monroe County

Summerfield Township: Dougherty & Markey 1 May LaVoy, NW NW NW 32-6s-6e, dry, T.D. 2,129 ft.

Montcalm County

Home Township: Belvidere 1 Jorgensen, SW NE NE 14-12n-6w, 9,160,000 cu. ft. gas, T.D. 1,238 ft.

Missaukee County

Riverside Township: Taggart Bros. 36 Geeseman-Koster, SE 20-21n-7w, 5,600,000 cu. ft. gas.
Taggart Bros. 1 Quist, NW 22-21n-7w, 7,000,000 cu. ft. gas.

Oakland County

Brandon Township: Fisher & McCall 1 Moshier, SW SW SW 15-5n-9e, dry, T.D. 2,721 ft.
Springfield Township: J. V. Wicklund 1 Dhroner, NE SE SW 2-4n-8e, dry, T.D. 1,984 ft.

Ogemaw County

West Branch Township: Weber 3 Crawford, NE NE SE 28-27n-2e, 80 bbl., acid, T.D. 2,685 ft.

Ottawa County

Tallmadge Township: Mesel & Spielberg 5 A. Linski, NE SE SW 14-7n-13w, 25 bbl., acid, T.D. 1,876 ft.

East Texas Activity in August

Plugged wells in the East Texas field amounted to 35 during the month of August, and 25 new producers were drilled during the same period, official Railroad Commission reports of Texas showed last week. A total of 115 wells changed hands during the month in 11 different trades. The largest transaction was that of T. D. Humphrey, Dallas, who sold 31 wells to the Kimbell & Bohner interests of Wichita Falls. The record showed that the rate of abandonment increased during the last part of the month. Twenty-four wells were plugged during the last half of August as compared with 11 for the first half.

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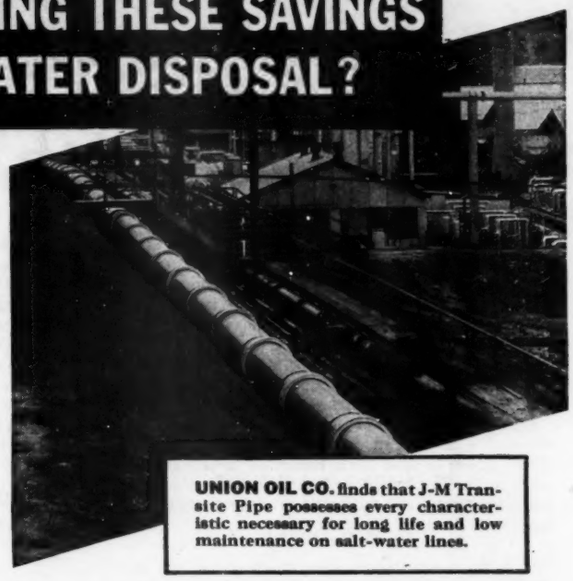

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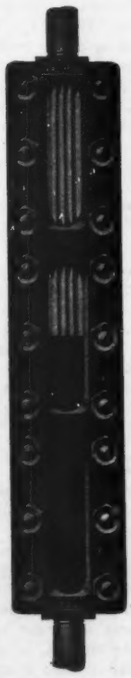

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By
GEORGE WEBER

Active Wilcox Play in LaSalle Parish Stimulated by Olla

SHREVEPORT, La., Sept. 9.—The Jena area of La Salle Parish stands out as the most active play in several months in the tristate district. Incited by shows of oil production in a wildcat located about 15 miles south of Olla, leasing and buying spurted in the general area of the wildcat. Another wildcat has been staked about 18 miles south of Olla, and the new play in addition to the activity in and around the Olla field make La Salle Parish the focal point of interest.

Claiborne and Caddo Parish wildcats were also watched with interest, and wildcatting activity continues strong in East Texas border. Arkansas remains quiet, with one Smackover lime wildcat beginning in Columbia County and little field drilling of importance.

La Salle Parish

H. L. Hunt 1-A Goodpine Oil Co. flowed at the rate of 60 to 70 bbl. hourly, making 55 per cent salt water this week to open another productive area in La Salle Parish. The wildcat, located in 10-7-3e, found oil sands in the Wilcox formation. Like the production at Olla, the production is coming from oil sands deeper in the Wilcox than ever before discovered. The top of the Wilcox in the Hunt wildcat is 2,484 ft., and the electrical log shows oil sands at 3,350-65 ft., 3,376-86 ft., 3,432-40 ft., and 3,480-90 ft. Gas sand was logged at 3,410-32 ft. and a sand body at 3,575-3,600 ft. shows gas in the top and oil in the base. A broken sand and shale body was encountered at 3,625-72 ft.

A string of 5½-in. casing was set at 3,690 ft. and perforations were shot at 3,624-69 ft. The test came in making 10 bbl. hourly through a ¼-in. choke with tubing pressure of 750 lb. and casing pressure of 1,200 lb. The fluid consisted at first of 88 per cent salt water, 12 per cent of 37-gravity and an estimated 1,000,000 cu. ft. of gas daily was produced with the oil. A later gage showed it flowing 60 to 70 bbl. daily and the salt-water percentage had dropped to 55 per cent. Operator is planning to shut off bottom water.

Atlantic Refining Co. has staked 1-B Goodpine Oil Co., NW NW 26-7-2e, about 18 miles south of Olla and 6 miles southwest of the Hunt wildcat. The test is rigging up and will be watched with considerable interest as it approaches the shallow Wilcox horizon during the coming week.

To the north the O. K. Allen, Jr., et al 1 Breedlove, 32-11-3, 2½ miles northeast of Olla production, was inactive after blowing out last week. The test went out of control when operator perforated oil string at 2,210-20 ft., and the gas flow was estimated at 20,000,000 cu. ft. The well bridged over and went dead this past week, however, and is shut down at total depth of 2,540 ft. for orders.

Another Olla outpost test, Peterson Petroleum Corp. 1 Tremont Lumber Co., NE SW 25-9-2e, may extend oil production. The test first showed 14,000,000 cu. ft. of gas in the Wilcox at 3,160-63 ft. and after squeezing and perforating made oil and salt water. The latest perforations at 3,036-38 ft. showed the hole full of oil, but well would not flow. It was pumped down in 6½ hours to 2,200 ft., and operators were arranging to lower rods and tubing.

Claiborne Parish Tests

Six Claiborne Parish tests, consisting of rank wildcats, deep tests in or near established fields and field edge tests, were of interest during the week. V. A. Hardin 1 Valentine, wildcat located in 31-20-6w, southwest of Lisbon, tried to blow out while contractor was lubricating stuck drill stem with 250 bbl. of oil. The well was successfully killed and drill stem is being cut out. Total depth is 5,023 ft. and since the test is running high it is of considerable interest.

In the Lisbon field J. D. Caruthers, trustee 1 Simmons unit, located 2 miles southwest of the Lisbon Exploration 1 Vaughn, will drill to the Travis Peak sands which showed production and in which 1 Vaughn was completed for a high-pressure gas-condensate well. North of the field, Union Producing 1-A Meadows, also a deep test, is drilling below 6,923 ft. in shale and streaks of sand.

The deep Haynesville test, Ohio 15 Taylor, is drilling below 9,330 ft. without having encountered any reported shows of oil. A. D. Yeary 1 J. A. Harris, a wildcat located 1½ miles southeast of Athens and about 5 miles southwest of Sugar Creek, is shut down for rig repairs at 900 ft.

Caddo Parish's deep wildcat, J. A. Conners 1-A Williams, 3-15-15, pumped for 11 days making an estimated 300 bbl. daily, 99 per cent salt water and 1 per cent 39-gravity oil. The wildcat is shut down at 5,130 ft.

Estimated Daily Production

Estimated daily gross production week ended September 6:

NORTH LOUISIANA

	Bbl.
Bellevue	485
Caddo, light	5,860
Caddo, heavy	2,340
Converse	505
Cotton Valley	*13,800
Cross Lake	3,920
De Soto and Red River	1,090
Elm Grove	330
Haynesville	2,820
Holly	75
Homer	2,825
Lisbon	3,420
Olla	2,985
Pleasant Hill	90
Rodessa	18,240
Sarepta-Carterville	†315
Sligo	1,650
Sugar Creek	10
Urania	2,440
Zwolle	1,630
Total North Louisiana	64,830

SOUTH ARKANSAS

Atlanta	2,700
Big Creek	100
Buckner	2,285
Champagnolle	1,165
Dorcheat	1,075
El Dorado	1,635
Fouke	240
Lewisville	550
Lisbon	215
Magnolia	21,400
McKamie	315
Miller County	350
Nevada	575
Nick Springs	600
Rodessa	1,820
Schuler	18,410
Smackover, light	1,640
Smackover, heavy	13,575
Stephens	520
Troy	1,235
Urbana	1,725
Village	1,125
Total South Arkansas	73,253
Rodessa, Texas	14,855

*3,710 bbl. is distillate; †45 bbl. is distillate.

NORTH LOUISIANA COMPLETIONS

Bellevue—Bossier Parish

Tide Water Associated 2 E-O Lodwick Lumber Co., 700 ft. S, 1,310 ft. W of C 10-19-11, completed as injection well, T.D. 424 ft., 7-in. casing 401 ft.

Sligo—Bossier Parish

Triangle Drilling 3-A Roy, SW SW cor. 18-17-11, pumped and flowed 100 bbl., T.D. 3,151 ft.

Caddo—Caddo Parish

Ce-Beth Oil 2 Ober, 36-21-16, pumping 35 bbl., T.D. 2,274 ft.
E. E. Johnson 2 Petroleum Development Corp., NE SW 32-21-15, pumping 30 bbl., T.D. 1,540 ft.
W. B. Johnson Drilling 1 Stiles, SW 22-21-16, pumping 40 bbl., T.D. 2,445 ft.
Pelham 4 Bickham, NE 28-21-15, pumping 65 bbl., T.D. 1,510 ft.
Savage et al 4-A Mansfield, SE 1-20-16, pumping 20 bbl., T.D. 1,536 ft.
Stanolind 1-B Head, 26-21-15, pumping 7 bbl. oil, 45 bbl. salt water, T.D. 1,573 ft.

Wildcat—Franklin Parish

J. B. White et al 1 Dailey, 1,170 ft. N, 2,490 ft. W of SE cor. 1-11-6e, dry, T.D. 3,016 ft.

Olla—La Salle Parish

Arkansas Fuel Oil 1-A Harris, SE SW 12-10-2e, 152 bbl., 12/64-in. choke, T.P. 350 lb., C.P. 510 lb., 6 per cent basic sediment and salt water, T.D. 2,230 ft.
Arkansas Fuel Oil 1-A Hopkins, NW SE 12-10-2e, 168 bbl., 6 per cent salt water, 20/64-in. choke, T.P. 60 lb., C.P. 560 lb., perf. 2,228-34 ft., T.D. 2,235 ft.
Placid 15 Louisiana Central, NW SE 13-11-2, 150 bbl. heading, 3 per cent basic sediment and 10 per cent salt water, 20/64-in. choke, T.P. 50 lb., C.P. 300 lb., perf. 2,225-36 ft., T.D. 2,410 ft.
Placid 27 Louisiana Central, NE NE 25-10-2, 144 bbl., 20 per cent salt water, 16/64-in. choke, T.P. 500 lb., C.P. 350 lb., perf. 2,225-30 ft., T.D. 2,404 ft.
Placid 29 Louisiana Central, SW NW 19-10-3, 168 bbl., 10 per cent basic sediment and salt water, ¼-in. choke., perf. 2,216-26 ft., T.D. 2,409 ft.

Monroe—Morehouse Parish

United Carbon 2 Mrs. H. Anderson, 41-21-5, 2,000,000 cu. ft. gas, R.P. 480 lb., T.D. 2,276 ft.

Monroe—Ouachita Parish

Interstate Natural Gas 101 fee, 44-19-3e, 3,500,000 cu. ft. gas, R.P. 800 lb., T.D. 2,184 ft.

Monroe—Union Parish

Noe-Woods Corp. 1 Dhu Thompson, 29-21-3, 500,000 cu. ft. gas, R.P. 1,015 ft., T.D. 2,215 ft.

FIRST REPORTS

Sligo—Bossier Parish

Triangle Drilling 3 Thigpen-Herold, SW SE SE 13-17-12.
Triangle Drilling 4 Thigpen-Herold, SE SE 13-17-12.

Caddo—Caddo Parish

A. R. Hancock 10 Standard Oil Co. fee, 710 ft. N, 745 ft. W of SE cor. NE 18-21-15.
James E. Kemp 1 Caldwell, 330 ft. W, 150 ft. N of C 18-21-15.
C. C. Lowery 1 Vivian Oil & Gas Co., NE NE NW NE 12-20-16.
N. W. Pannill 2 Muslow, 1,980 ft. N, 1,402 ft. E of SW cor. 32-21-15.
Sydney P. Smith 2 Muslow, 180 ft. S, 479 ft. W of NE cor. SE 5-20-15.

Wildcat—La Salle Parish

Atlantic 1-B Goodpine Oil Co., NW NW 26-7-2e.

Olla—La Salle Parish

Placid 34 Louisiana Central, SE SE 25-10-2e.
Placid 35 Louisiana Central, NW NW 31-10-3.
Placid 36 Louisiana Central, NE NE 36-10-3.
Placid 37 Louisiana Central, SW NW 31-10-3.

Wildcat—Red River Parish

J. A. Whitson 1 Christopher, SE SW 16-13-10.

Wildcat—Tensas Parish

H. L. Hunt 2 Chicago Mill & Lumber Co., SW NE 30-12-10e.

Monroe—Union Parish

Memphis Natural Gas 10 Lankford, SE SW cor. 29-23-4e.

DRILLING REPORT

Bossier Parish

H. M. Harrell et al 1 Porter, 1,370 ft. W, 1,276 ft. S of NE cor. 20-17-11, set 12½-in. casing 156 ft., 9⅝-in. casing 1,200 ft., waiting on cement.
Roy L. Reese et al 1 Bellevue Land Co., 170 ft. E, 365 ft. N of C 27-20-11, S.D. 3,035 ft., fishing job.

Caddo Parish

J. M. Conner 1-A Williams, SW SE NE 3-15-15, pumped est. 300 bbl. daily for 11 days, 99 per cent salt water, 1 per cent oil, 39 gravity, S.D. orders 5,130 ft., old T.D. 6,500 ft.
R. W. Crosby 1 W. E. Glassell, NW SW NE 11-19-15, S.D. 1,290 ft.

Claiborne Parish

J. D. Caruthers, trustee 1 Simmons unit, N½ SW 2-20-5w, rigging up.
V. A. Hardin et al 1 Valentine, 593 ft. E, 660 ft. S of NW cor. 31-20-6w, lubricated stuck D.S. with 250 bbl. oil, well tried to blow out, killed and arranging to cut out D.S., T.D. 5,023 ft.
Ohio 15 Taylor Acct. 1, 100 ft. S and W of C SE 15-23-8, drilling sand and shale 9,336 ft.
Haynes B. Owenby 2 L. E. Ozley fee, 490 ft. N, 660 ft. E of SW cor. NW 33-20-5, oil sand 5,740-60 ft., arranging set casing 5,785 ft.
Union Prod. 1-A T. D. Meadows et al, 1,321 ft. S, 1,294 ft. W of NE cor. 18-21-4, drilling sandy shale 693 ft.
A. D. Yeary 1 J. A. Harris, 1,050 ft. E, 100 ft. N of SW cor. 17-19-6, S.D. 900 ft., repair rig.

De Soto Parish

R. C. Swayles 1 Jackson, 1,190 ft. S, 830 ft. E of NW cor. SW 36-12-14, drilling shale 397 ft.
Union Prod. 1-B Mrs. M. E. Garrett, 1,320 ft. N, 1,980 ft. W of SE cor. 33-12-16, drilling anhydrite and shale 4,796 ft.

Grant Parish

Peterson Pet. Corp. 1 Swope, 182 ft. N, 85 ft. W of SE cor. NW SE 18-9-1e, drilled out and tested salt water 1,609 ft., awaiting orders.

La Salle Parish

O. K. Allen, Jr., et al 1 Breedlove, 180 ft. N, 110 ft. W of C 32-11-3e, blew out, est. 20,000,000 cu. ft. gas after perf. 2,214-19 ft. (cor.), killed well, bridged over, awaiting orders 2,540 ft.
H. L. Hunt 1-A Goodpine Oil Co., 100 ft. N, 220 ft. E of C SW NW 10-7-3e, set 5½-in. casing 3,690 ft., flowing 60-70 bbl. daily, 55 per cent salt water, will squeeze to shut off bottom water.
Peters 1 Tremont Lumber Co., NE SW 25-9-2e, perf.

(Continued on Page 94)

By
DAL DALRYMPLE

Iuka, Wilkins Outposts Show As Probable Extensioners

EXTENSION producers, pool openers and activity in the Severy area of Greenwood County featured field operations in Kansas last week. Several new outpost tests were started. Pool openers in Stafford and Phillips counties and an extension well in the South Sittner area of Stafford County were completed.

Extension of the Iuka pool in Pratt County 1½ miles to the northeast appeared imminent at Marylyn Oil Co. and others 1 Jackson, CEL NE NW 1-27-13w. Simpson zone was found high at 4,214 ft. and saturation was found in a core to 4,228 ft. Casing was set for a production test.

An outpost about ¾ mile southwest of the Trapp pool, Barton County, swabbed 34 bbl. of oil an hour for 3 hours from Arbuckle formation at 3,328-35 ft., total depth. It is the Kaiser & Wakefield 1 Sausen, CWL SW SW 12-16-14w. Potential was to be taken by drawdown method.

The Wilkins pool in Ellsworth County may be extended ¾ mile northwestward at Vickers Petroleum Co. and others 1 Peterman, C N½ NE NE 14-17-10w. It entered Arbuckle zone at 3,263 ft. and found saturation in a core at 3,264-70 ft. Five-inch casing was set at 3,263 ft. The Peterman, reported checking high on structure, found anhydrite at 542 ft. and Lansing lime at 2,925 ft.

The second producer and north offset to the discovery well in the Stafford pool, Stafford County, was near completion at Stanolind Oil & Gas Co. 1 Crawford, CSL SE NE 15-24-11w. It flowed 149 bbl. of oil in 1¾ hours while the crew was cleaning out in Viola lime at 3,812-37 ft. Operators were coring deeper into the formation.

Stanolind 1 Judd, C SE SE 15-21-38w, wildcat in Kearny County and 29 miles west of the Nunn pool in Finney County, was cleaning out to 3,773 ft. and preparing to test showings in Topeka lime. It was drilled to granite at 6,070-71 ft., total depth, and plugged back to 3,706 ft. after lower formations failed to produce. Lansing lime was topped at 4,060 ft., Mississippi 4,811 ft., Viola 5,425 ft., Arbuckle 5,555 ft., weathered granite 6,065 ft. It is the farthest west test in Kansas.

In southeastern Kansas, Gilbert Larson of Oakland, Calif., was starting a Wilcox sand test near Piqua, eastern Woodson County. He recently bought the Lucky Strike Oil Co. property in that area. In the same general area, but southeast of Piqua and in Allen County, Beaver Drilling Co. started work at another Wilcox sand test.

The townsite development at Severy, southern Greenwood County, continues unabated, with several wells completed and new tests being started. Activity has been extended to an area about 1¾ miles southeast of Severy, where a new producer recently was drilled in an old sector of the field. Ward McGinnis, Eureka operator, has started a wildcat test in C SW SW 9-26-12e, about 6 miles east of the Severy townsite play. Lemon & Shewmaker 1 Anderson, C W½ SE SE 5-28-11, about 1 mile north of the townsite pool, was reported in the pay. C. S. Blankenship and others 1 Van Knight, SW 3-28-11, wildcat northeast of the pool, was nearing the pay.

A wildcat was started in southern Saline County by Clifford Long and Crown Petroleum Co. at No. 1 Lacquement, SW SW SW 29-16-1w. It is 1 mile north of the McPherson County line and 3½ miles northeast of the Roxbury pool.

WILDCATS

Stafford County: Shell 1-A Bean, SE SE SW 21-23-12w, swabbed 197 bbl. in 2⅝ hr., potential 2,700 bbl. oil and 300 bbl. water, Arbuckle 3,839-54 ft., T.D.

Phillips County: Cities Service 1 Ray, NE NW SE 32-5-20w, pumped 286 bbl. in 8 hr., potential 858 bbl., 34.5 gravity, basal sand 3,540-63 ft., T.D. 3,603 ft.

Rooks County: Aylward Production 1 Richards, C N½ NW SW 31-10-18w, dry, T.D. 3,705 ft., Lansing 3,195 ft., base Kansas City 3,489 ft., Sooy 3,489 ft., no Arbuckle.

McPherson County: Broadwater 1 Heaton, E½ SE SE 28-17-1w, dry, T.D. 3,375 ft., Kansas City 2,125 ft., Mississippi 2,706 ft., Hunton 2,979 ft., Viola 3,198 ft., Arbuckle 3,355 ft.

Ellsworth County: Duwe & Farris 1 Williams, N½ NW SE 18-17-8w, dry, T.D. 3,311 ft., Lansing 2,822 ft., Sooy 3,275 ft., Simpson shale 3,294 ft., Arbuckle 3,296 ft.

Barton County

Krier field: Derby Oil 2 Esfeld, NE SW NW 29-16-11w, pumped 46 bbl. in 8 hr., potential 140 bbl., from Sooy at 3,317-32 ft. and basal sand at 3,333-36 ft., T.D.

Skelly 2 Esfeld, E½ SE NE 30-16-11w, pumped 417 bbl. in 8 hr., potential 1,251 ft., sand 2,870-2,978 ft., T.D. 3,117 ft.

South Silica: Gulf 4 Kasselman, NL NE SW 23-20-11w, pumped 88 bbl. in 5 hr., potential 1,800 bbl., Arbuckle 3,273-91 ft., T.D.

I.T.I.O. 3 Bryant, SL NW SE 23-20-11w, depthograph potential 4,836 bbl., Arbuckle 3,271-75 ft., T.D.

Ellinwood pool: Texas 3 Petz, NL SE SE 7-20-11w, pumped 29 bbl. oil per hr., maximum allowable potential 3,000 bbl., Arbuckle 3,296-3,316 ft., T.D.

Clawson area: Champlin Refining 2 Clawson, NL NW NW 17-20-11w, 75 bbl., Arbuckle 3,326-42 ft., T.D.

Otis field: Fees & Hoyt 1 Schreiber, S½ NE SW 17-18-15w, 35,000,000 cu. ft. gas daily, sand 3,470-96 ft., T.D.

Butler County

Brandt pool: Adair & Morton 12 Brandt, NW NE SE 15-28-7, pumped 114 bbl. in 8 hr., potential 343 bbl., Mississippi 2,676-2,710 ft., T.D.

Reynolds-Shaffer pool: H. & M. Drlg. 1-A Tatums, SE SE NE 4-27-6, dry, T.D. 2,832 ft., Mississippi 2,775 ft., pumped 3 bbl. oil and 15 bbl. water at 2,810 ft.

Douglas pool: Simpson Oil 2 Piper, SE NE SW 17-29-4, dry, T.D. 1,902 ft., Lansing 1,845 ft.

Ward McGinnis 1 Cundall, SE SE NW 12-24-4, dry, T.D. 2,625 ft., Mississsippi 2,428 ft., base Mississippi 2,529 ft., pumped 6 bbl. oil per day.

Ellis County

Bemis pool: Champlin Ref. 2 Hadley, S½ SE NE 20-11-17w, dry, T.D. 3,561 ft., Topeka 2,940 ft., Simpson shale 3,523 ft., Arbuckle 3,530 ft.

Winkler-Koch 3 Hadley, S½ SE NW 21-11-17w, depthograph potential 3,220 bbl., Arbuckle 3,364-71 ft., T.D.

Cities Service 1-B Collahan, SW NW NW 25-11-17w, echometer potential 2,420 bbl., Arbuckle 3,555-70 ft., T.D.

Burnett pool: Phillips 6 Peavey, S½ NE SE 13-11-18w, swabbed 46 bbl. oil per hr., made maximum allowable of 3,000 bbl., Arbuckle 3,350-54 ft., T.D.

Greenwood County

Willard pool: Miller et al 1 Hancock, NW cor. 18-27-11, dry, T.D. 1,948 ft., Mississippi 1,914 ft.

Severy pool: Robinson 1 Roberts, NE SE NW 17-28-11, 35 bbl., Kansas City, 1,224-30 ft., T.D.

Shewmaker et al 1 Pierce, NE SE NW 17-28-11, 10 bbl., Kansas City 1,225-28 ft., T.D.

Virgil pool: Henderson Oil 2 Schneider, NE SW SW 9-23-13, 20 bbl., Mississippi 1,770-79 ft., T.D.

Ellsworth County

Stoltenberg pool: Cities Service 1 Hagy, WL NE SW 16-16-10w, pumped 255 bbl. in 13 hr., Arbuckle 3,378-96 ft., T.D.

Skelly 1 Boldt, EL SE SW 21-16-10w, dry, T.D. 3,339 ft., Lansing 2,999 ft., Sooy 3,318 ft., Arbuckle 3,323 ft.

Ehler pool: Atlantic Refining 1 Matosh, N½ NE SE 34-16-10w, pumped 62 bbl. in 8 hr., potential 186 bbl., Arbuckle 3,280-84 ft., T.D. 3,293 ft.

Lario Oil & Gas 4 Mehl, N½ NW SE 35-16-10w, made maximum allowable of 3,000 bbl., Arbuckle 3,287-94 ft., T.D.

Stratman area: Derby et al 1-A Phelan, N½ NE SE 2-17-10w, 36 bbl., Arbuckle 3,276-82 ft., T.D. 3,295 ft.

Grant County

Panhandle Eastern J Joyce, SW SW NE 33-30-33w, gaged 22,500,000 cu. ft. gas daily from Herrington sand at 2,390-2,890 ft., T.D., acidized with 10,000 gal.

Estimated Daily Production

Estimated daily production for Kansas for the week ended September 7, and for the preceding week, was as follows:

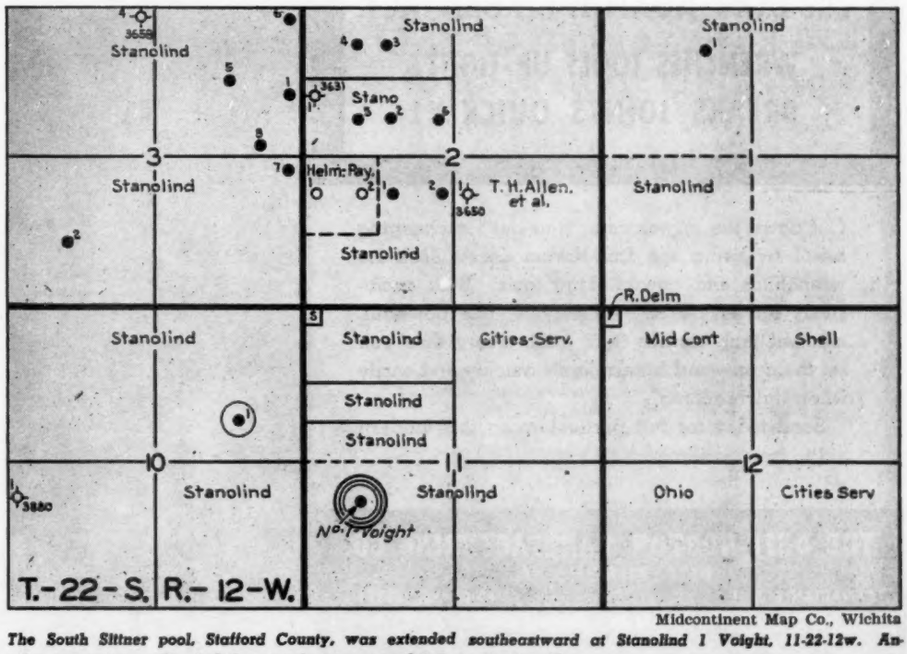
	Barrels	
	Sept. 7	Aug. 31
Oxford City	700	650
Burrton	7,900	7,650
Ritz-Canton	4,150	4,150
Graber	1,750	2,000
Hollow-Nikkel	1,850	1,800
Lerado	700	550
Voshell	1,700	1,700
Wellington	1,650	1,750
Ellsworth County:		
Lorraine	1,250	1,550
Other pools	2,330	3,480
Rice-Barton counties:		
Bloomer	2,750	3,850
Chase	4,200	4,800
Geneseo	2,750	2,850
Raymond	1,200	1,050
Sflica	11,600	14,900
Keesling	600	700
Wherry	3,300	3,050
Miscellaneous Barton	7,495	9,020
Trapp district	10,450	13,050
Balance Russell County	15,650	18,000
Sedgwick County	3,250	3,100
Ellis County:		
Bemis	8,800	6,250
Miscellaneous	8,320	9,145
Kingman County	325	680
Stafford County	9,490	11,140
Greenwood County	8,850	8,750
Eldorado	7,400	7,450
Other fields	35,340	36,855
Total Kansas	165,750	176,900

Kingman County

Cunningham area: Skelly 4 Interurban Realty, SW NW SW 30-27-10w, flow 162 bbl. in 8 hr., potential 487 bbl., Lansing 3,404-62 ft., T.D.

McPherson County

Ritz pool: Northwestern Prod. 1-B Whittall, W½ NE



Midcontinent Map Co., Wichita

The South Sittner pool, Stafford County, was extended southeastward at Stanolind 1 Voight, 11-22-12w. Another extension well, circled, recently was completed in Section 10

NE 29-19-1w, gaged 3,000,000 cu. ft. gas daily, Mississippi 2,932-50 ft., T.D.
Bennett & Grossman, NW SE NE 25-19-2w, 80 bbl., Mississippi 2,960-78 ft., T.D.
Bornhold pool: Tulsa Oil Corp. 4 Mattson, N½ NE SW 19-20-5w, bomb potential 2,901 ft., Mississippi 3,274-3,330 ft., T.D.

Russell County

Trapp pool: Cities Service 3-B Bender, SW NE SE 23-15-14w, echometer potential 848 bbl., Arbuckle 3,342-49 ft., T.D.

Stafford County

South Snider pool: Champlin Ref. 2-B Smith, NE SE SE 17-21-11w, pumped 179 bbl. in 8 hr., potential 536 bbl., Simpson sand 3,391-3,407 ft., T.D.
South Sittner pool: Stanolind 1 Voigt, EL NW SW 11-22-12w, pumped 53 bbl. in 8 hr., potential 161 bbl., Arbuckle 3,728-33 ft., T.D.

KANSAS FIRST REPORTS

Butler County

Bennett & Abel 1-A Lindley.....SW SE SW 6-27-7
Gralapp & Baum 1 Barnes.....NE SW SW 16-29-4
Simpson Oil 1 Lessman.....NW NE NW 18-29-4
Adair & Morton 13 Brandt.....N½ S½ NE 15-28-7

Cowley County

E. B. Shawver 3 Davis.....SE NW NE 21-30-4
Ryan Consolidated 1 Marble Savings NE NE NW 13-30-5

Ellis County

Cities Service 19 Collahan.....SE SW SW 24-11-17w

Greenwood County

K. T. Weideman well.....SE SW NE 25-27-8
Henderson et al 1 Lewis.....NW NW NE 36-27-8
Hammer et al 1 Knight.....NW SW SW 4-28-11
Mendenhall 1-A Sanders.....NE SE NE 5-28-11
Brazil & Patterson 1-A Tollman.....SW cor. 15-28-11
Lemon et al 1 Roberts.....SE SE NW 17-28-11
Nichols et al 1 Palmer.....NE NE NW 17-28-11
Robinson 1 Meeks.....SW NE NW. 17-28-11

Russell County

Shields 4 Rogg.....S½ SE NW 9-15-13w

Sedgwick County

Steinbuchel 1 Vilm.....NW NW NE 18-28-1

WILDCAT DRILLING REPORT

Cowley County

Sage, Murfin & Markey 1-A Carlson.....CWL SW SW 21-30-3
Set 6-in. casing 2,565 ft., show free oil 2,910-25 ft., in sandy shale, cleaning out 2,925 ft.

Douglas County

Forrester et al 1 Altenbernd.....CSL NW 35-12-20
Base Mississippian 1,507 ft., Hunton 1,564 ft., H.F. W., S.D. 1,605 ft.

Kearny County

Stanolind 1 Judd.....SE SE 15-21-38w
Set plug 3,718 ft., show black oil, cement back to 3,700 ft.

Marion County

Rex & Morris 1 Rudolph.....NE NE SE 36-17-3
Mississippian 2,414 ft., show oil, set 7-in. casing 2,417 ft., T.D.

Pratt County

Cities Service 1 Lehrling.....NE SW SW 19-27-11w
Viola 4,317 ft., Simpson 4,391 ft., Arbuckle 4,513 ft., T.D. 4,529 ft., set 5-in. casing 4,489 ft., P.B. to 4,387 ft., perf. 4,315 ft. and 4,328 ft., S.D.

Rice County

R. E. Buckles 1 Ramsey.....C E½ SE SE 9-18-7w
Lansing 2,730 ft., drilling 2,820 ft.

Forest City Basin

ST. JOSEPH, Mo., Sept. 9.—Viola lime production, long sought by southeastern Nebraska operators, may have been found at E. J. Shaffer 1 Sandrock, SW NW 20-1n-16e, southwest of Falls City, Richardson County. The lime was topped at 2,797 ft. to the surprise of operators, who had expected it at around 2,840-50 ft. Oil and gas was reported showing in a core at 2,818½ ft., and operators were reported optimistic although they did not announce amount of saturation found. Additional cores were being taken. Oil men familiar with the Falls City field believe this test probably will be the largest producer yet completed in Richardson County. Two Hunton lime producers in Section 20 yielded around 500 bbl. daily, initially. Other tests in Richardson County are at routine stages.

Black Gold Operating Co. and J. O. Issacks 1 Magor, NE NE 15-5n-15e, Nemaha County, Nebraska, spudded with rotary tools. Bow & Arrow-Wrightsman 1 Wrightsman, NW NW 36-5n-14e, is another Nemaha County test at which work was started the past week, and in that county E. W. Schrock 1 Rogge, NW NW NW 17-5n-13e, was making hole below 200 ft.

In Otoe County, immediately north of Nemaha, H. A. Risk 1 McCord, NW SW SW 15-8s-14e, was underreaming 10-in. pipe from 419 to 700 ft.

In the Missouri sector of the Forest City basin, Brin & Nathan continued to pump water at 1 Decker, C NW NW 1-61n-36w, Holt County, from a formation operators believe contains oil.

In Bates County, Missouri, John Eger was drilling below 210 ft. at a test in NE SE 13-38-29w, according to information from Mr. Eger, a Cut Bank, Mont., operator.

California Fields

(Continued from Page 75)

Southern Pacific in the Northeast Coalinga field of Fresno County at 8,308 ft. but has plugged back because of some gray sand found in the bottom of the hole. Top of the Kreyenhagen was cored in this well at 7,180 ft., top of the glauconitic was found at 8,123 ft. and top of the productive Gatchell sand was cored at 8,173 ft. A production test will be made within the next week. A check of drilling operations indicates that Standard Oil Co. with eight strings of tools in operation leads in drilling operations in the Coalinga district followed by R. S. Lytle with three wells under way and by Union, Texas, Wilshire, Superior, Pure, Petrol, Getty, E. L. Cord, Bandini and Amerada with one each. The Northeast and Southeast Coalinga fields still have a number of undrilled locations ready for future work.

SAN JOAQUIN VALLEY COMPLETIONS

Cole's Levee Field

Richfield 54-4-B Kern County Land.....4-31s-25e
Flowed 690 bbl., 46.1-gravity, 14 per cent cut, 8,000,000 cu. ft. gas, two 1½-in. beans, pressures 400/1,100 lb., T.D. 9,630 ft., producing from upper and lower Stevens sand. Casing record: 8⅝-in. water string cemented 8,825 ft., 863 ft. of 5½-in. liner 9,625 ft. and perf. 8,923-9,133 ft., and 9,173-9,625 ft. Original 844 ft. of 6⅝-in. liner pulled and sidetracked when hole redrilled from 8,877 ft., top of unrecovered tubing, to present bottom. Kern County

Edison Field

Goodrum & Vincent 6 S.P.....31-29s-30e
Pumped 12 bbl., 13.1-gravity, T.D. 510 ft., elev. 900 ft., 140 ft. of 6⅝-in. liner 510 ft., perf. 410-510 ft.

Midway-Sunset Field

Foster, Robert 1 Hollingsworth.....15-32s-23e
Pumped 60 bbl., 24.3-gravity, 5 per cent cut, T.D. 2,575 ft., 6⅝-in. 2,574 ft. and perf. 2,511-74 ft.

Mount Poso Field

Signal-Vedder 1 Glide.....29-27s-28e
Initial 200 bbl., 16.1-gravity, 2 per cent cut, on pump, 8⅝-in. casing cemented 2,297 ft., 6⅝-in. including 100-mesh perforations 2,289-2,314 ft. at T.D., elev. 831 ft., opens new productive area about 1 mile west of southern tip of Mount Poso field, Kern County.

Southeast Coalinga Field

Lytle, R. S. 57-18-F.....18-20s-16e
Flowed 2,386 bbl., 31.4-gravity, 1,588,000 cu. ft. gas, 23/64-in. bean, pressures 1,400/1,500 lb., T.D. 7,941 ft., completed in Gatchell sand of Eocene age, 622 ft. of 6⅝-in. liner including perforations 7,358-78 ft., 7,417-7,609 ft., 7,648-7,825 ft., 7,863-7,941 ft., 7,941 ft., top Temblor 5,188 ft., top Kreyenhagen 6,190 ft., top glauconitic 7,344 ft., top productive Gatchell zone 7,359 ft., base Gatchell sand 7,930 ft., Fresno County.

Ten Section Field

Shell 32-30-A Kern County Land.....30-30s-26e
Flowed 2,196 bbl., 35.2-gravity, 3.7 per cent cut, 1,575,000 cu. ft. gas, 4½-in. casing cemented as water string at 7,930 ft. with 425 sacks cement, 3½-in. liner landed 8,236 ft., T.D. 8,236 ft., well located in northwest part of field, Kern County.

Rio Bravo Field

Superior 1-1 Osborn.....28-28s-25e
Flowed 1,565 bbl., 39.1-gravity, 2,420,000 cu. ft. gas, T.D. 11,477 ft., 7⅝-in. casing cemented at 11,090 ft., completed in the Rio Bravo and Vedder zones.
Superior 1 Pasadena Realty.....33-28s-25e
Flowed 1,480 bbl., 38.9-gravity, clean, 1,800,000 cu. ft. gas, T.D. 11,355 ft., top Rio Bravo zone 11,260 ft., 7⅝-in. casing cemented at 11,260 ft., completed in Rio Bravo and Vedder zones.
Union 2-34 Kern County Land.....34-28s-25e
Flowed 1,491 bbl., 38.9-gravity, 1,600,000 cu. ft. gas, T.D. 11,470 ft., 5½-in. casing cemented at 11,268 ft., 213 ft. of 4-in. liner including 179 ft. of 120-mesh perforations at 11,464 ft., completed in Rio Bravo and Vedder zones.

Round Mountain District

Trico O. & G. 2 Coffee.....8-28s-29e
T.D. 1,392 ft. in Walker gray sand, top Vedder 1,178 ft., faults at 400 and 800 ft., Walker is found immediately on top of granite basement and is unproductive, Kern County.

SAN JOAQUIN VALLEY DRILLING REPORT

Northeast Coalinga

Associated 1 U. S. I.....6-19s-16e
T.D. 7,890 ft. in hard brown shale, top Kreyenhagen 7,596 ft., Fresno County.

Kreyenhagen District

Continental 1 Kreyenhagen.....4-22s-16e
T.D. 9,090 ft., fishing 68 ft. drill pipe, drill collar and bit, top Kreyenhagen 8,333 ft., Fresno County.

Blackwell's Corners District

Seaboard 66-17 Beer.....17-26s-19e
Drilling 6,485 ft. in gray Point of Rocks sand of Eocene age, cored 17 ft. of tight sand showing light cuts around 6,300 ft. No permeable sands, Kern County.

Tejon District

Richfield 1 Tejon Ranch.....2-10n-19w
T.D. 7,023 ft., standing cemented with 9⅝-in. casing landed at 6,968 ft., extreme southern end of San Joaquin Valley in Kern County.

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Buena Vista Hills District

Honolulu 25-P fee 10-32s-24e
Drilling 7,230 ft. in hard sand with streaks of brown shale, fair gas odor in the sand, top Stevens sand believed found at 6,870 ft., on Buena Vista anticline within productive limits of Midway-Sunset field of Kern County.

Trico (Delano) District

Associated 35-22 Daniel 22-24s-23e
T.D. 11,728 ft., P.B. 10,900 ft., abandoning lower part of hole and will be turned over to Trico Oil & Gas Co. for completion in upper gas zone that was blanked off, top first Mya 2,434 ft., top first Mya sand 2,443-49 ft., top Mulinia 3,908 ft., top McLure 7,400 ft., top Olcese sand, which was gray, 9,421 ft., top Vedder, which was all gray, 10,314 ft., top lower Vedder 10,515 ft., top Eocene 11,706 ft. At 10,515-16½ ft. core showed oil sand and gray sand with 6-in. fair saturation, formation test 10,426-10,-900 ft., opened 40 minutes, recovered 7,200 ft. of salt water. Located in Tulare County.

COASTAL DISTRICT

Of more than passing interest in the Coastal district this week is the announcement that Union Oil Co. has purchased the wells and holdings of Ohio Oil Co. in the Santa Maria Valley district of Santa Barbara County. The change of ownership does not involve much from a financial standpoint but it gives Ohio Oil Co. some remuneration and permits this company to pull out of the area. To Ohio Oil Co. officials this must have been very pleasant because this area has been a headache to all concerned due to the low-gravity oil involved, high drilling clauses and inability to produce economically. Wells are only permitted to produce a very small part of their potentials because of the limited demand for this quality of crude which in addition to being of a low gravity contains on an average about 3 per cent sulfur. None of the various marketers want the oil and for this reason production must of necessity be restricted to a minimum. One parcel of the acreage taken by Union Oil Co. from Ohio Oil Co. is potential acreage and may later be found productive but no attempt will be made to determine its potentialities in the near future as this would complicate the present production allotment. In the Ventura Avenue field, General Petroleum Corp. will soon complete 19 Barnard in the deep zone as the bit in this well is at present rotating ahead in the pay at 8,040 ft. It is the present intention to continue drilling in order to take in as much formation as possible. Substantial production is anticipated upon completion as adjacent wells have all been better than 1,000-bbl. producers. Out in the east end of the Ventura Avenue field, Lloyd Corp., headed by Ralph Lloyd, largest land owner in the field, has reached a depth of 9,400 ft. in well No. 5. This well has been held up for several weeks with mechanical trouble but with a string of 9⅝-in. casing cemented at 6,890 ft. should be able to proceed to completion depth without further trouble. This well when the mechanical trouble developed showed considerable pressure and it was only controlled with considerable care and a lot of heavy mud.

COASTAL DISTRICT COMPLETIONS

Goleta District

Texas 1 Bishop 13-4n-29w
Abandoned as unproductive, T.D. 4,350 ft., top Vaqueros 3,306 ft., top Sespe 3,760 ft., formation test 3,306-64 ft. recovered 1,400 ft. of salt water, Santa Barbara County.

COASTAL DISTRICT DRILLING REPORT

Betteravia

Union 2 Pezzoni 33-10n-35w
Drilling in Sisquoc sand and shale at 6,980 ft., Santa Barbara County.

Sespe District

Merchants 8 Cochran 1-4n-20w
Drilling sandstone and friable oil sand of Sespe at 2,735 ft., Ventura County.

Rocky Mountain Area

(Continued from Page 76)

Texas 4 Schlag ..... NE SW SE 26-35n-6w
Spudding at 125 ft.
Par Oil 3 Tribal-170 ..... NE NW SW 7-32n-5w
Rigging up. First report.
R. C. Jeffries 2 Clarke ..... NW SW 34-35n-6w
Rig on ground. First report.
A. B. Cobb 7 Walburger ..... NW SW SW 35-35n-6w
Drilling 849 ft., top Colorado 500 ft.
M. R. Wagner 1 Tribal-184 ..... NE NE NE 13-32n-6w
Drilling 1,195 ft., top Colorado 530 ft.
Texas 7 State ..... SE NW 16-32n-5w
Drilling 1,300 ft.
Texas 10 Tribal-122 ..... CEL NW SE 6-32n-5w
Rigging up.
A. R. Pardue 1 Tribal ..... SW SE NE 19-32n-5w
Rigging up.
Montana-Dakota 1 Tribal-112 ..... SW NW NE 16-35n-6w
Drilling 2,035 ft.
Montana Headlight 7 Britton ..... NW NW SE 11-34n-6w
Cemented 10¾-in. at 523 ft., top Colorado 523 ft.
Santa Rita 4 Government ..... CSL NE SE 4-32n-5w
Cemented 7-in. at 3,035 ft.
A. B. Cobb 1 Teterud ..... NE NE NE 24-37n-5w
S.D. 2,704 ft.
Glacier Prod. 3 Hall ..... NW SE 35-36n-6w
Cemented 7-in. at 2,985 ft.

Liberty County

Western Natural Gas 1 Wilson, NW cor. 27-37n-4e, Whitlash field, was completed in the base of the Colorado at 1,433 ft., total depth, for 4,000,000 cu. ft. of gas daily. Location is on the southwest flank, ¼ mile northeast of a dry hole.

Rehab-Drout-Tieltges are moving in rig for a test in the Prairie Rose district, where they have 14,000 acres under lease. It will start in a 12½-in. hole.

Rehad-Drout-Tieltges 1 Tieltges, SE SE SW 21-31n-5e
Moving in rig. First report.

Pondera County

R. C. Tarrant 1 Lang ..... SE SE NW 14-31n-5w
Drilling 2,730 ft.

Stillwater County

Texas 1 Unit ..... SE NW 10-4s-19e
Drilling 3,645 ft.

Toole County

Montana Gas 1 Nelson, SE NE 12-35n-1e, test on large block east of Kevin-Sunburst leased up by the late Harry Roe, of Denver, for H. C. Bretschneider et al, was plugged and abandoned at 1,265 ft. It had water at 1,000 ft. which caused hole to cave and bury tools, followed by loss of fishing tools.

Kevin-Sunburst had one completion and one new operation.

B. A. S. Aronow 4 Ellingson, CEL SW SW 14-35n-3w, is pumping 60 bbl. a day of pipe-line oil and no water from break in the Madison lime at 1,781-83 ft., after acidizing with 500 gal. Total depth is 1,783 ft. Contact at 1,761 ft. was dry.

Prevol & Shay 1 Government ..... SW NW 15-35n-3w
Spudding. First report.
H. F. Patterson 1 Government ..... NE SE SE 15-35n-3w
Location.
Montana-Dakota 1 Lake City ..... NE SE 17-33n-2e
Drilling 250 ft. in Colorado shale.
Frank P. Walsh 1 Mowat ..... SW NW SE 7-33n-2e
Drilling 50 ft. in Colorado shale.
Kippen O. & G. 2 Solberg ..... CSL NW NE 20-35n-3w
S.D. 1,070 ft.
Twin Fields Oil 2 Government ..... SE SE SW 21-35n-3w
T.D. 1,767 ft., contact at 1,746-54 ft., show oil in break at 1,767 ft.
Morton O. & R. 9 Morton ..... NW NW SE 13-34n-2w
S.D. 1,310 ft.
Pacific National 9 Government ..... NE SE SE 8-35n-2w
Drilling 1,635 ft., Sunburst at 1,400-15 ft., contact at 1,630 ft.
McKnight & Stock 3 State ..... NE NW NW 16-35n-2w
Drilling 1,602 ft., good show oil in contact at 1,596 ft.
Big West 18 Dahlquist ..... CWL NW NE 28-35n-3w
T.D. 1,763 ft., shot 40 qt.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty 2 Pajarito 22-9n-1e
Cleaning out to resume at 2,000 ft., contract depth 3,500 ft.

McKinley County

Petroleum Products 11 Hospah ..... SE NW SW 1-17n-9w
Rigging up.
Teague, Greer 1 Santa Fe 33-18n-10w
S.D. 1,350 ft., for casing.
Petroleum Producers 9 Hospah ..... NW NW SE 1-17n-9w
T.D. 1,570 ft., testing, may abandon.

San Juan County

Claude Carroll 1 Cornell ..... SW NE 11-29n-12w
Cemented 4½-in. at 1,340 ft., to test gas show.
Kutz 1 Government ..... NW NW 28-28n-10w
Drilling 1,650 ft.

San Miguel County

Southwest Drilling 1 Conchas ..... NW NE 34-17n-21e
Drilling 2,630 ft. in hard gray lime.

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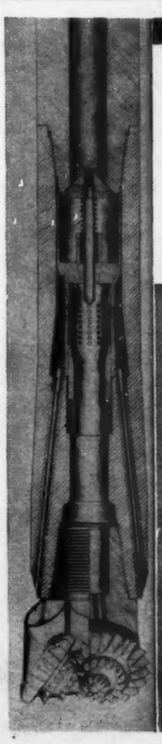

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Handyville and Griffin Fields Most Active in Central West

By STAFF CORRESPONDENT

EVANSVILLE, Ind., Sept. 9.—During the past week there were five oil wells, six dry holes and a small gas well completed in Indiana. All five wells were in the Griffin pool of Gibson and Posey counties and had a total initial production of 1,363 bbl. Sun 2 Dietz, in the Heusler pool of Posey County, was drilled deeper and recompleted in the Tar Springs as a 50-bbl. pumper. Work was started on 13 wells.

INDIANA COMPLETIONS

Boone County

M. N. Smith 1 Marshall.....NW NW NE 34-19n-2e Dry. Trenton 1,050 ft., St. Peter 1,540 ft., T.D. 1,825 ft.

Gibson County

Papoose 11 Cooper A.....NW NE SW 13-3s-14w Flowed 398 bbl., Cypress 2,477-2,500 ft.
Continental 7 Keck.....SW SE SE 27-3s-14w Pumped 144 bbl., Cypress 2,493-2,517 ft.
Lewis Prod. 1 Cooper E.....NW NW NW 34-3s-14w Pumped 97 bbl. oil and 20 bbl. water, Waltersburg 2,083-2,107 ft.

Porter County

J. E. Bander 1 Jones.....NE SE SW 30-36n-5w Dry Devonian 284 ft., Pendleton 377 ft., T.D. 391 ft.

Posey County

Sun 2 Dietz.....NW SW SE 1-7s-12w Pumped 50 bbl., Tar Springs, drilled deeper from 1,820-1,911 ft.
H. K. Riddle 1 Greathouse.....NE NE NE 13-7s-15w Dry. Elev. 360 ft., Glen Dean 2,214 ft., Ste. Genevieve 2,740 ft., T.D. 2,880 ft., P.B. to test show 1,440 ft.
Superior 28 New Harmony.....NE SE SW 1-5s-14w Dry. Ste. Genevieve 2,952 ft., McClosky 3,012-16 ft., T.D. 3,040 ft.
Robert Bros. 4 Keck.....SW NE NW 34-3s-14w Pumped 124 bbl., 4,000 gal. acid, 2,886-97 ft., T.D. 2,900 ft.
Roy Ryan et al 6 Keck.....NW NW NW 34-3s-14w Flowed 600 bbl., 2,500 gal. acid, McClosky 2,837-45 ft., T.D. 2,890 ft.

Randolph County

Mrs. J. Seip 1 Clark.....NW NW SE 8-19n-13e 80,000 cu. ft. gas, Trenton 995 ft., pay 1,004-51 ft., 200 lb. pressure.

Spencer County

B. Hoover 1 Rothert.....SW NW NW 1-5s-6w Dry. Ste. Genevieve 1,113 ft., shows 724-80 ft., T.D. 1,241 ft.

Whitley County

Michigan O. & G. 1 Bailey.....NE SE 3-30-8e Dry. Drilled deeper from 575 ft. to 1,375 ft.

INDIANA DRILLING WELLS

Adams County

R. W. Hough 1 fee.....SE NE NW 24-26n-13e Decorah 1,281-1,308 ft., S.D.

Daviess County

Newton P. L. 1 Brittain.....NE NE SW 15-1n-5w Elev. 507 ft., Ste. Genevieve 621 ft., Salem 1,058 ft., Devonian 1,912 ft., S.D. 2,150 ft.

Gibson County

Bander et al 39 Cooper.....NW NW NW 19-3s-13w First report.
Continental 8 Keck.....SW SW SW SW 27-3s-14w First report.
United Pet. 1 Maxam.....NE NE NE 17-2s-10w Ste. Genevieve 831 ft., 2 bailers water 1,034 ft., H.F.W. 1,092 ft., drilling 1,120 ft.
Roberts 1 Hall.....NW NW NE 20-1s-11w Glen Dean 1,718 ft., Hardinsburg 1,745 ft., drilling 2,350 ft.
Newton P. L. 1 M. E. Carrithers SW NW SW 25-1s-10w Glen Dean 1,290 ft., Hardinsburg 1,318 ft., S.D. 1,710 ft.
Newton P. L. 1 Prud. Life Ins. . .NE NE NE 35-1s-10w Spudded and S.D.

Hamilton County

N. N. Smith 1 Pedige.....NE NE 28-18n-3e First report.

Hancock County

J. H. Snyder 1 Clift.....E½ E½ E½ 17-15n-7e First report.
Mrs. F. L. Ardis 1 fee.....SE NW NW 24-17n-6e Drilling 175 ft.

Henry County

W. M. Friedley 1 fee.....W½ E½ NE 12-17n-9e First report.

Jasper County

A. C. Thomas 1 Connane.....SW SW SW 1-29n-6w First report.

Jay County

E. Burke 2 Lyons.....NE SE SE 23-22n-14e Trenton 1,080 ft., show oil 1,090-1,102 ft., drilling 1,102 ft.
Pet. Dev. 1 J. Brinegar.....NE NE NW 29-24n-13e Slight show oil 3,505 ft., drilling 3,536 ft.

Madison County

Frontier 1 Montgomery.....SE NW SW 8-21n-8e 8-in. casing 72 ft.

Martin County

Collier & Burton 1 Swayze.....NW NE NE 10-3n-4w Elev. 440 ft., Ste. Genevieve 1,127 ft., S.D. 1,356 ft.

Posey County

W. C. McBride 3 Swander.....SW NW NW 4-4s-14w First report.
C. T. Somers et al 1 Hill.....NE NE NE 2-4s-14w First report.
Continental 2 Kleiderer.....NE NE NE 33-3s-14w First report.
Jarvis Bros. et al 1 Murphy.....SW SE NE 35-3s-13w First report.
Nelson Dev. 2 Horstman.....SE NE NE 7-6s-12w First report.
R. B. Creagher et al 1 Struck-Williams.....SW SE NE 1-7s-12w Menard 1,653 ft., Waltersburg 1,730-48 ft., drilling 1,748 ft.

Pike County

G. W. Miller 1 J. R. Nixon.....SE SW NE 14-3s-8w Trenton 4,400 ft., S.D. 4,600 ft.
W. H. Neub 1 Stone.....SW NW NW 21-1n-7w Elev. 440 ft., Ste. Genevieve 1,127 ft., S.D. 1,356 ft.

Spencer County

H. M. Hunt et al 1 Seay.....NE NW 5-8s-6w First report.
S. A. Vanburg 2 Prostmann.....NE NW SE 1-6s-4w First report.
O. F. Kelly 1 Miller.....SE SE NE 2-8s-7w Glen Dean 1,176 ft., drilling 1,745 ft.

OHIO

NEWARK, Ohio, Sept. 9.—Of the 32 wells completed in Ohio during the past week, 13 were dry holes. 7 were oil wells, and 12 were gas wells. Ten of the 13 dry holes were Clinton tests, deepest being 5,200 ft. in Tuscarawas County. Newark field yields only gas well gaging 1,000,000 cu. ft. Perry County has two fair oil completions in the Clayton pool.

Athens County

Carthage Township: Ohio Fuel 1 C. Wilson, Sec. 16, 700,000 cu. ft. gas, Keener 1,255-76 ft.
Rome Township: Gifford 3 J. Parmiter, Sec. 30, 5 bbl., first Cow Run 383-413 ft., T.D. 423 ft.

Coshocton County

Pike Township: Willey 1 O. McKee, Sec. 19, 20 bbl., 400,000 cu. ft. gas, Clinton 3,111-61 ft.

Lawrence County

Elizabeth Township: Kachelmacher 1 Mineral Products Co., Sec. 23, dry, Clinton 3,017-29 ft., T.D. 3,149 ft.

Guernsey County

City of Cambridge: Wharton 1 J. B. Warden, 20,000 cu. ft. gas, Berea 1,135-61 ft.

Hocking County

Ward Township: Preston Oil 186 Sunday Creek, Sec. 11, dry, Clinton, T.D. 3,454 ft.
Walsmith 1 C. A. Grummond, Sec. 5, dry, Clinton 3,496-3,537 ft.

Holmes County

Ripley Township: Ohio Fuel 1 I. Moore, Sec. 27, dry, Clinton, T.D. 3,230 ft.

Knox County

Howard Township: Perkins 1 C. Spearman, Lot 11, first quarter, 80,000 cu. ft. gas, Clinton 2,630-45 ft.
Union Township: R. B. Vaughn 1 D. Kirk, Sec. 25, dry, Clinton, T.D. 2,720 ft.

Licking County

Licking Township: Lacknette 1 Di Giandomenico, Lot 17, first quarter, dry, Clinton 2,452-76 ft., T.D. 2,486 ft.
Mary Ann Township: Ohio Fuel 1 F. Wilkins, Sec. 16, 1,600,000 cu. ft. gas, Clinton 2,535-59 ft.
City of Newark: Murphy 1 Van Voorhis, west part of city, 430,000 cu. ft. gas, Clinton 2,345-73 ft.
Newton Township: Moore 1 H. Hartman, Lot 14, fourth quarter, dry, Clinton, T.D. 2,581 ft.
Perry Township: Stricker 13 G. E. Patton, Sec. 6, 8 bbl., Berea 630-40 ft.

Lorain County

Eaton Township: Ohio Fuel 1 R. Durkee, Lot 47, 740,000 cu. ft. gas, Clinton 2,542-46 ft.
Grafton Township: Forest Oil 9 Wise, Lot 53, 2 bbl., Berea 144-84 ft.
Forest 10 Wise, dry, T.D. 206 ft.
Forest 11 Wise, 1 bbl., Berea 127-62 ft
Forest 12 Wise, ½ bbl., Berea 125-88 ft.

Medina County

Chatham Township: Preston 6 Packard, Lot 2, Tract 16, ½ bbl., Berea, T.D. 501 ft.

Muskingum County

Salt Creek Township: Atha 1 C. E. Hock, Sec. 20, dry, Clinton 4,137-75 ft., Medina 4,249-55 ft., T.D. 4,288 ft.

Noble County

Marion Township: Watson 1 Leisure, Sec. 11, dry, Berea, T.D. 1,675 ft.

Wayne Township: Yoker Valley 2 A. Eagon, Sec. 28, 200,000 cu. ft. gas, Berea 1,451-56 ft.

Perry County

Clayton Township: Preston 4 C. A. Beacham, Sec. 17, 90 bbl., shot, Clinton 3,269-3,304 ft.

Stark County

Bethlehem Township: Natural Gas of W. Va. 1 Conservancy district, Sec. 25, 50,000 cu. ft. gas, Red Clinton 4,450-91 ft., T.D. 4,621 ft.
Jackson Township: Lyons 1 W. Rohr, Sec. 29, dry, Clinton 4,206-14 ft., show of gas, T.D. 4,241 ft.
Plain Township: East Ohio 2 W. Shoemaker, Sec. 4, 150,000 cu. ft. gas, Clinton, T.D. 4,642 ft.

Tuscarawas County

Goshen Township: Benedum-Trees 1 C. E. Leggett, Lot 34, second quarter, dry, Clinton 4,915-5,001 ft., T.D. 5,203 ft.

Vinton County

Richland Township: Kelch 1 W. Pierce, Sec. 12, 30,000 cu. ft. gas 1,174-78 ft. (Ohio shales), shot, T.D. 1,816 ft.

Washington County

Barlow Township: Campbell 4 W. Liebrand, Sec. 4, 280,000 cu. ft. gas, Injun 1,507-18 ft.
Dunham Township: McTaggart 1 A. F. Male, NE Sec. 12, 400,000 cu. ft. gas, Maxburg 800-ft. sand 1,318-22 ft.

EASTERN KENTUCKY

ASHLAND, Ky., Sept. 9.—Three oil wells, six gas wells, and two dry holes were reported completed with a month-end report giving a full roundup of drilling activities in eastern Kentucky. A check of the various counties reveals that several dry holes are listed and that completion data is also given on wells that have been drilled in within the last 2 weeks.

Martin County

Virginian Gas & Oil V-1287 Virginia Halbert, Little Crooked Branch, 60 bbl., Maxon, T.D. 1,463 ft.
Virginian Gas & Oil V-1290 Virginia Halbert, 7 bbl., Maxon, T.D. 1,473 ft.
Warfield Gas 4887 E. D. Wiles et al, Calf Creek, 600,000 cu. ft. gas, shale, T.D. 3,126 ft.
E. C. Ware et al 1 C. L. Cline, on Middle Fork, 380,000 cu. ft. gas, shale, T.D. 2,595 ft.

Morgan County

Owens, Libby-Owens 1 J. H. Wilson, on Grassy Creek, 50 bbl., Corniferous, acid with no increase, T.D. 1,300 ft.
Floyd Fitch 1 Smith heirs, on Birch Fork, 530,000 cu. ft. gas, 705 ft., P.B. from 2,460 ft.
Fitch & McGowan 1 A. C. Bradley, on Birch Fork, dry, T.D. 801 ft.
Fitch & McGowan 1 Rissie Fraley, on Williams Fork, dry, T.D. 765 ft.
Fitch & McGowan 1 M. C. Bradley, on Lick Branch, dry, T.D. not given.

Knott County

Warfield Gas 4882 R. H. Amburgy, on Hollybush Creek, 73,000 cu. ft. gas, shale, T.D. 3,126 ft.
E. C. Ware et al 1 J. W. Duke, on Combs Branch, 2,700,000 cu. ft. gas, Maxon, T.D. not given.

Pike County

Columbian Fuel 838 Tierney Land Co. No. 14, on Stratton Fork, 292,000 cu. ft. gas, Maxon, T.D. 2,106 ft.

WESTERN KENTUCKY

OWENSBORO, Ky., Sept. 9.—Western Kentucky had a better-than-average week as nine oil wells and one gas well were completed. Of the oil wells, five, with a total initial production of 960 bbl. were in the Handyville district of Daviess County. Four of these wells produced from the Jett sand and the fifth from the Bethel.

Completions and drilling operations were as follows:

Daviess County

Handyville district: Ohio 4 Steve Cooms, 200 bbl., 120-qt. shot, Jett 1,235-62 ft., T.D. 1,263 ft.
Stewart & Snyder 5 Anna Ezell estate, 200 bbl., 40-qt. shot, Bethel 1,624-31 ft., to shoot Jones and Jackson sands.
Staves 7 L. I. Igleheart, 400 bbl., 230-qt. shot, Jett 1,244-94 ft.
Teiler 4 E. F. Lebold, 110 bbl., 100-qt. shot, Jett 1,270-94 ft.
Master 9 E. W. Richmond, 50 bbl., 60-qt. shot, Jett 1,212-26 ft., T.D. 1,231 ft.
Staves 9 L. I. Igleheart, rigging up.
Utica district: Baldwin 6 A. A. Westerfield estate, 150 bbl., 120-qt. shot, Jett 1,148-69 ft., to shoot Barlow and Bethel sands, T.D. 1,496 ft.

Hancock County

Dukes School district: Roy Beard 1 R. E. Pate, 400,000 cu. ft. gas, Bethel 430-40 ft.
Roy Beard 2 R. E. Pate, rigging up.
Saunders School district: Flesher 4 W. F. Burk, west 30 acres, drilling at 300 ft.

Henderson County

Hebbardsville district: Snowden & McSweeney 1 Corrine Bennett, set casing at 1,500 ft.
Hupp 1 Otto Busby, 75 acres, coring Jett sand.
Stewart & Snyder 1 Otto Busby, 135 acres, rigging up.
Corydon district: Sun 1 J. S. Clark, moving in rotary.

McLean County

Island district: South Penn 11 H. K. and John Kirtley, 75 bbl. oil, 40 bbl. water, 1,000 gal. acid, McClosky 2,008-14 ft.
Livermore district: Matthews & Preston 6 Hollis Howell, location.

Ohio County

Oaks district: Don Russell et al 9 Charles Downs, 10 bbl., Jett 335-53 ft.
Friendship Church district: McGowen et al 1 J. T. Edge, 25 bbl., 60-qt. shot, Barlow 650-62 ft.

By
DAL DALRYMPLE

Open Pool in Tillman County; Test Near Weleetka Produces

A TILLMAN County outpost was showing as a small natural producer, opening a deep pool 1½ miles northwest of the Frederick field, in southwestern Oklahoma. Discovery well is G. E. Kadane and associates 1 Andrews, NW NW NW 35-2s-19w. Attempts to complete a producer at total depth of 5,638 ft. failed and it was plugged back and tested at 5,465-80 ft., where it had a hole half full of oil. It was estimated good for 30 to 35 bbl. daily, naturally. It may be given a shot of nitro. The oil is light green and tests about 44° gravity. Location is on a farmout from I.T.I.O., which owns many leases in the county. The Amerada, Gulf and Magnolia companies also have nearby acreage.

A new producing zone was found on the east side of the Cement field, Caddo County, at English & Rollins 1-A Rigney, SW SW NW 12-5-9w. It found pay at 4,567-87 ft., which is a deeper zone than is productive elsewhere in that sector of the field, and gaged 19,600,000 cu. ft. of gas, with 1,800 lb. rock pressure. Operators are preparing to start work at a second test on the lease. Deals for several additional tests on Cement townsite are reported in the formative stage.

A town-lot drilling campaign at Weleetka, Okfuskee County, may follow an oil strike on the edge of the town at Doak & Hughes 2 Lowe, SE SE NE 16-10-11. It had sand, probably Booch, at 1,894 ft., drilled ½ ft. in pay and was reported flowing 35 bbl. an hour. Gas gaged 5,000,000 cu. ft. Eight-inch casing was set on top of pay. The operators have leases on most of the acreage blocked inside Weleetka city limits.

Texas 1 Berryman, NW SE SW 36-11-8, two locations east of the East Cromwell pool discovery well in Okfuskee County, topped Cromwell sand at 3,490 ft. and found saturation in a core at 3,511-16 ft., total depth. Seven-inch casing was set at 3,511 ft. The hole may be deepened slightly before testing. In NE SE SE 25-11-8, Shell Oil 1 Replogle, found Cromwell sand at 3,445-76 ft., total depth, and it blew out with heavy unestimated flow of gas while the crew was drilling plug. No oil was showing. Foundation Oil Co. was cleaning out 1 Berryman, NE NE NE 35-11-8, and was producing 4 to 5 bbl. of oil an hour after a 7-qt. shot in Cromwell sand at 3,416 ft.

Danciger Oil & Refineries 1 Richards, C NE NW 3-17-4w, on the southeast flank of the old Lovell area in Logan County, was drilling around 3,000 ft., seeking Layton pay expected between 4,000-5,000 ft.

COMPLETIONS, FIRST REPORTS

Caddo County

Wildcat: Graham 1 Cooke, NE SE NE 35-5-9w. Pits.
Cement field: Ray Stephens, Inc. 1 Farwell, SW SW SW 27-6-10w. First report.

Carter County

Healdton field: S. and D. Daube 31 Westheimer & Daube, SE SW SE 14-4s-3w. Lime 1,260-1,341 ft., T.D. 1,344 ft., P.B. 1,336 ft., pumped 17 bbl. oil and 14 bbl. water.
Hewitt field: Gibson 2 Hoover, SW SW SE 20-4s-2w. First report.
Kyle 8 Daugherty, NE SE SW 17-4s-2w. First report.
Sholem Alechem pool: Magnolia 5 Love-Johnson, NE SE NE 32-1s-3w. Tussy lime 3,658 ft., T.D. 4,307 ft., dry.

Creek County

Miscellaneous: Chapman 4 Allen, SE SE SE 35-15-10. Wilcox 3,107-25 ft., T.D., shot with 95 qt. at 3,280-96 ft., pumped 50 bbl.
Sinclair Prairie 3-B Wells, NW NW NW 5-16-8. Old well plugged back from 3,496 to 3,346 ft., ripped 6-in. casing at 2,542-2,800 ft., gaged 100,000 cu. ft. of gas.
Dunn et al 1 Anthis, NW SE SE 34-14-10. Old well drilled deeper from 3,196 to Wilcox 3,276-3,301 ft., T.D., P.B. and shot with 95 qt. at 3,280-96 ft., pumped 135 bbl.
Tilley 2 Haworth, NE NE NE 1-17-9. Red Fork 2,296-2,321 ft., T.D. 2,336 ft., P.B. 1,847 ft., acidized with 2,000 gal. at 1,808-47 ft., pumped 9 bbl. oil from Red Fork and Oswego formations.
Sand Springs Home 1 Clemons, NW SW NW 19-19-8. Old well drilled deeper from 2,540 ft. to broken sand pay at 2,732-70 ft., T.D. 2,782 ft., pumped 15 bbl.
Ernest Shamblin 2 Horany, W½ SE NW 18-17-11. T.D. 2,471 ft., pumped 20 bbl.

Grady County

Wildcat: Arrowsmith 1 Jelks, NE SE NE 22-5-7w. Location.
Chickasha field: Lone Star 1 Glover, C NW NE 27-5-8w. Location.

Garvin County

Butterly area: Kerlyn Oil 1 Butterly, NE NW SW 23-1n-1e. Abandoned location.

Kiowa County

Wildcat: Southwest Drilling 1 Dugger, NE SW SW 14-6-18w. Spudded and shut down.

Le Flore County

Miscellaneous: LeFlore Gas 1 Morrison, CSL SE SW 31-7-23. First report.

Lincoln County

West Davenport pool: White et al 1 Bell, SE SW NE 5-14-5. First report.

Logan County

Wildcat: Wilson 1 Fry, NW NW NW 4-18-4w. Location abandoned.
Lovell area: Danciger 1 Richards, C NE NW 3-17-4w. First report.

Muskogee County

Wildcat: Garrett 1 Rinehart, SE SE SE 15-13-17. Sands 2,062-92 ft. and 2,231-32 ft., T.D., dry.

Okfuskee County

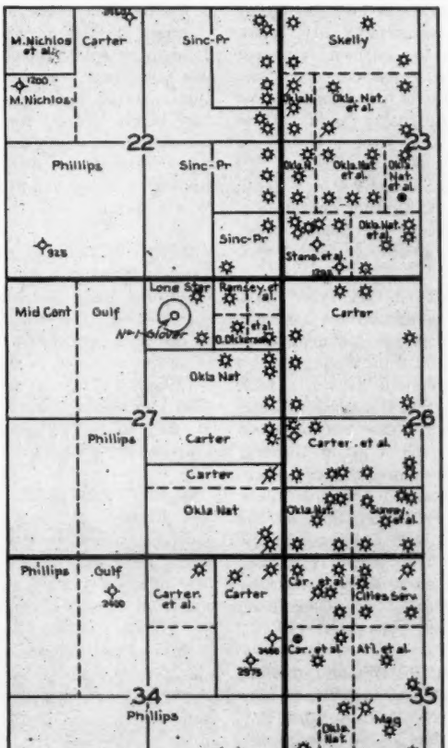
Wildcat: Selby 1 Camp, SW SW NE 25-11-8. Booch 3,066-3,125 ft., sand 3,478-86 ft., T.D., dry.
Dustin area: Moffett 1 Fields, C SW NE 31-10-12, wildcat. Machine.

Oklahoma County

Oklahoma City field: I.T.I.O. 14 Emerson, S½ N½ SW 30-11-2w. Set 9-in. casing 4,095 ft., T.D. 4,135 ft., P.B. 4,091, perforated casing at 4,081-91 ft., gaged 1,100,000 cu. ft. of gas.

Okmulgee County

Miscellaneous: J. E. Dow 7 Trident, SW NE NE 1-14-14. T.D. 640 ft., gaged 100,000 cu. ft. of gas.



Midcontinent Map Co., Tulsa

Lone Star Gas Co. has started a 4,000-ft. test at 3 Glover, NW NE 27-5-8w, on the west side of the Chickasha gas field, Grady County. Two other deep tests on the west flank of the field are in the formative stage, but locations have not been announced

Ben Greenfield 3 Howard, CEL NW NW 32-14-14. T.D. 1,300 ft., pumped 5 bbl.
Wright & Kirkland 3-A Green, SW NW NE 24-15-12. T.D. 1,338 ft., gaged 2,600,000 cu. ft. of gas.
Newberry et al 1-A Forrest, SW SW NE 30-15-12. T.D. 1,390 ft., pumped 5 bbl.

Osage County

Manion area: Finance Oil 28 Osage, SW SE SW 19-23-9. T.D. 2,260 ft., dry.

Payne County

Coyle pool: Texas 4 Minnich, E½ NW NE 11-17-1e. Wilcox 4,903-45 ft., T.D. 4,949 ft., set 7-in. casing 4,844 ft., shot with 20 qt. at 4,905-35 ft., flowed 175 bbl.
Cushing area: Jackson 1 Dorrett, NW NW NW 2-18-6. Bruner pay 1,092-98 ft., T.D., gaged 1,000,000 cu. ft. of gas.
Miscellaneous: Oklahoma Gasoline Plants 1-A Minnich, NE NE NE 3-18-6. First report.
Ramsey pool: Mid-Continent 1 Butler, NW SW SE 18-18-2e. Deepened from 4,973 ft. to second Wilcox sand at 5,018 ft., dry, T.D. 5,139 ft., completed for water-disposal well.

Estimated Daily Production

Estimated daily production in Oklahoma for the week ended September 7, and for the preceding week, was as follows:

	Barrels	
	Sept. 7	Aug. 31
Allen	5,250	5,225
Billings	6,075	6,025
Burbank	7,325	7,275
South Burbank	8,025	7,950
Balance Osage	18,150	18,100
Blackwell district	3,350	3,300
Bristow-Slick	5,875	5,800
Chandler	1,075	1,050
Crescent	2,175	2,150
Cromwell	3,000	2,950
Cushing-Shamrock	9,350	9,250
Duncan	3,650	3,600
Edmond	3,800	3,750
Fish	3,225	3,200
Fitts	16,750	15,400
Jesse	2,300	2,150
Graham-Fox	2,500	2,475
Gray	850	825
Healdton	8,775	8,725
Hewitt	4,125	4,000
Keokuk	3,050	3,025
Konawa	1,100	1,075
Lucien	7,800	7,750
Moore	1,700	1,700
Northeastern counties	17,300	17,250
Oklahoma City	102,650	104,900
Olympic	2,100	2,025
Ramsey	3,750	3,750
Sasakwa	1,550	1,500
Sholem-Alechem	2,900	2,825
Seminole district:		
Bowlegs	6,650	6,650
Carr City	2,325	2,300
Dora	2,225	2,200
Earlsboro	4,050	4,050
East Earlsboro	1,825	1,825
South Earlsboro	525	525
Little River	6,700	6,650
East Little River	650	625
Maud	550	525
Mission	1,275	1,225
Seminole	6,825	6,800
East Seminole	1,275	1,200
Searight	2,100	2,025
Total Seminole	36,975	36,600
St. Louis-Pearson	25,250	25,100
Tatums-Tussy	2,825	2,750
Tonkawa-Garber-Thomas	3,650	3,625
Wewoka	1,550	1,550
Yale-Jennings	3,050	3,050
Other pools	84,750	83,325
Total Oklahoma	417,475	415,000

Pontotoc County

Bebee pool: Hall 3 Summers, NE SW SE 26-5-4. Viola 2,446 ft., set 7-in. pipe 2,447 ft., dolomite 2,585 ft., T.D. 2,637 ft., shot with 260 qt. at 2,492-2,560 ft. and 120 qt. at 2,560-2,630 ft., swabbed 180 bbl.
Patterson 1 Roberts, SW NE NE 36-5-4. Viola 2,497 ft., T.D. 2,640 ft., acidized with 2,000 gal., pumped 60 bbl.
Senora Oil & Gas 2 Burke, NE NW NE 36-5-4. Viola 2,530 ft., T.D. 2,555 ft., junked hole, dry.
Jesse pool: Thompson 1 Haney, NE NW NW 2-1n-7e. First report.
Steedman area: Henry 1 Brown, SE SE SE 17-4-8. First report.

Pottawatomie County

St. Louis district: Gulf 4 Green, NE NW SE 17-7-4. Old well drilled deeper from 4,178 ft. to second Wilcox 4,288 ft., T.D. 4,290 ft., pumped 365 bbl. oil and 200 bbl. water.
South Konawa area: Hall 1 Walker, SE SW SW 4-5-5. Sand 640-675 ft., T.D., dry.
Prague pool: Howard Berkey 2 Wilson, NE NW NW 4-11-6. Rigging up rotary.

Seminole County

Fish pool: Mid-Continent 1 Ferguson, NE SW SW 18-7-8. Wapanucka 3,380 ft., sandy Wapanucka 3,413

(Continued on Page 98)

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Among the Drilling

TWO STATES Drilling Co., Dallas, Tex., last Friday spudded a second test for Amerada Petroleum Co. on its holdings in the recently opened Fargo field of north Wilbarger County, North Texas. The test is about 1 mile southeast of the discovery well, the No. 1 Goodpasture, which opened production in the Canyon lime at 3,230-50 ft. It will be Amerada's No. 1 J. H. and J. T. Parker, and if satisfactory production is not found in the projected pay horizon drilling will be carried deeper.

ARROW Drilling Co., Tulsa, has finished a new producer on its holdings in the Foster field, Ector County, West Texas. The well is No. 14 Foster, located in Section 8, Block 42, Township 2s, T.&P. Survey, and made 886 bbl. of oil daily after treatment with 1,500 gal. of acid at the total depth of 4,300 ft.

GLENN McCARTHY, Houston, Tex., is testing his No. 1 W. B. Munson, a wildcat located in the Bailey Prairie area, Brazoria County, Texas. This well is the deepest test ever drilled on the Texas coast, and the production test is being made below 11,000 ft. In Galveston County, Algoa area, Texas Co.'s No. 1 Kainer is drilling below 9,700 ft. and the well is expected to be drilled to a depth below 10,000 ft. Another operation is being started in the Coleto Creek field, Victoria County.

DELTA Drilling Co., Tyler, Tex., has received contract from Amerada Petroleum Corp. for the drilling of a 6,500-ft. wildcat in Wood County, East Texas. It will be No. 1 J. J. Lloyd, 467 ft. from the north line and 1,090 ft. from the east line of a 164-acre tract in the William Barnhill League. It is on a 3,000-acre block, 4 miles northeast of a recent failure by Plains Production Co. on the Smith tract in the Caldron Survey. The new test is expected to be contracted sufficiently deep to test the Rodessa section of the Glen Rose lime.

I. W. MURFIN, Wichita drilling contractor, has started work at Max Steinbuchel's No. 1 T. J. Vilm, NW NW NE Section 18-28-1e, Sedgwick County, Kansas. It is a wildcat 1 mile north of the Oatville Simpson sand pool.

NICKLOS Drilling Co., Houston. Tex., is starting a new operation in the Ville Platte field, coastal Louisiana, for Continental Oil Co. Another rig is operating in the field for the same company, while at the Tepetate field one rig is being used on a workover job. In the Bateman Lake and Horseshoe Bayou field, St. Mary's Parish, production tests were being made on two deep wells for Texas Co. On the Texas coast, in Galveston County, Continental Oil Co.'s No. 1 Davis, a wildcat, is drilling in shale below 8,056 ft.

HARRY L. EDWARDS Drilling Co., Houston, Tex., received contract from W. L. Goldston for a well to be drilled at the Anse La Butte dome, St. Martin Parish, coastal Louisiana. Drilling was being started at the Esperson dome on an east-flank test for W. P. Luse, while another rotary was being moved to Harris County for Cities Service Oil Co.'s No. 1 Kuehn, a projected 7,800-ft. wildcat about 11 miles northwest of Houston.

C. E. REYNOLDS and J. C. McKinney, drilling contractors of Okmulgee, Okla., are drilling Damon Oil Co.'s No. 1 Chaffin, wildcat in the J. C. Ketcham Survey, 4 miles from Bonham in Fannin County, Texas. It is to be a 4,000-ft. rotary test unless shallower commercial production is found. Location is on a 5,000-acre block. Nearest production is in the Sulphur Bluff pool, about 50 miles distant in Hopkins County. Geology was by Claude F. Daly, Fort Worth, Tex.

PARKER Drilling Co., Houston, Tex., is starting a well at the Anse La Butte field, St. Martin Parish, coastal Louisiana, for Stanolind Oil & Gas Co., while two other operations are reported in the district for Continental Oil Co. at South Roanoke field, Jefferson Davis Parish, and at the Black Bay prospect in La Fourche Parish.

GREAT WESTERN Drilling Co. and Rhodes & Tompkins, drilling contractors and operators in West Texas, have set surface casing on the first of a 5-well program on a farmout from Sinclair Prairie Oil Co. in the North Cowden field of Ector County. First location on the lease, the 224-acre Maurice lease in Section 31-43-2s, T.&P. Survey, is in the southwest corner of the section.

CHRISTIAN CARPENTER Drilling Co., Houston, Tex., opened the first crude-oil production in the Ogburn field, Harris County, Texas, with the completion of W. L. Goldston's No. 1 Josey, which is flowing pipe-line oil from a new sand at approximately 6,600 ft. In the same field No. 1 Rorick, which is being drilled jointly with Joyce Richard-

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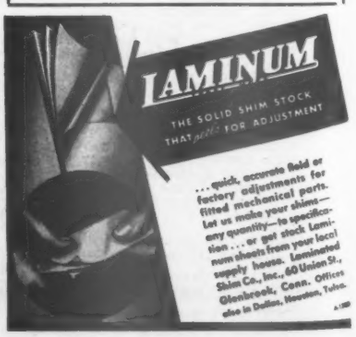
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son, and about 3,200 ft. southwest of the discovery well, is nearing the expected pay horizon.

BROCK BROTHERS, drilling under contract for Coffield & Guthrie, Inc., Corsicana, Tex., have completed to its projected contract depth a wildcat in Scurry County, West Texas. It is No. 1 Moar, NW Section 334, Block 97, H.&T.C. Survey. Now bottomed at 4,500 ft., negotiations are under way to deepen it to the Ordovician level.

THOMAS J. CARTER, contractor of Dallas, Tex., has received contract from W. E. Butler, Dallas, for a wildcat test a mile southwest of Bristol in Ellis County, eastern Texas. Rotary tools are being moved to the location, which is on the A. M. Sims tract on a block of 8,000 acres assembled by J. M. Mosses of Dallas and turned to Butler for the drilling of the well. It is contracted to the Glen Rose, which is expected at about 3,800 ft.

PATON BROTHERS, cable-tool contractors in the Southeast New Mexico district, have completed as dry a wildcat test for May Weathers on the Flood lease in Eddy County. After drilling several shows of oil, none of which proved sufficient for commercial production, the hole was quit at 1,740 ft. It was located in the SE SE Section 24-18-23.

ROWAN Drilling Co., Houston, Tex., extended production in the Rowan field, Brazoria County, Texas, about 1,200 ft. northeast with the completion of its No. 2 Hubbard, the second well in the field, which was completed in the discovery pay at 8,500 ft. Location for another well was made and the rig is being moved in.

W. B. OMOHUNDRO, drilling contractor and operator of Wichita Falls, Tex., has been awarded contract for drilling a 4,500-ft. wildcat 2 miles north of Wichita Falls by E. P. Bowen and associates. Location has been staked in the center of Block 23, William Anglin Survey, Abstract 2 on the A. McKinley farm. The operators have assembled a block of 2,000 acres in the surrounding area. Drilling is expected to be started within the next 10 days.

PECK & CROFT, contractors of Midland, Tex., were rigging up machine to drill North Shore Corp.'s No. 2 State, NW NE Section 16-20-32e, north offset to the discovery well in the Halfway pool, western Lea County, New Mexico. The North Shore Corp. of Midland recently purchased the producing well and 120 acres of leases in the Halfway pool from Sam Weiner, who drilled the discovery.

ALLEN & MORRIS, San Antonio, Tex., opened production in the West Ranch field, Jackson County, Texas, for Darby Petroleum Co., and the rig is being moved to a new location. In the old Bruni field, Webb County, one rig is running for American Liberty Oil Co., a Wilcox test which has passed the 9,600-ft. horizon. Two other operations are reported at the La Rosa and Agua Dulce fields in Refugio and Nueces counties for the Shield Oil Co. and Agua Dulce Co.

PERRY FOX, drilling contractor of Mertzon, Tex., has been awarded contract for drilling a wildcat on the Russell Wardlaw ranch in northwest Uvalde County, Texas. The test is to be drilled for Bernard Einstoss and D. A. Morris and associates of Los Angeles, Calif., and is on a block of 11,480 acres assembled by Dr. Emil Ott, San Angelo geologist. The test will be carried to 2,500 ft., drilled with spudding machine. Location is C NW Section 12, Russell Wardlaw subdivision, 14 miles southeast of Campwood and 6 miles east of the Nueces River.

DEXTER & BERRY, New Mexico contractors, have finished a 54-bbl. well in the Jackson field of Eddy County for Premier Petroleum Corp. It is No. 7-F Beeson, located in NE NE Section 31-17-30, and made its 24-hour flow through ¼-in. tubing after being shot in the pay from 2,830-45 ft. The well was drilled with cable tools.

E. J. SHAFFER, Hutchinson, Kans., contractor, was reported to have found good oil showings in Viola lime cores at No. 1 Sandrock, SW NW 20-1n-16e, on the southwest edge of the Falls City pool, Richardson County, Nebraska. Observers predict it would be the biggest producer yet drilled in the field, basing their opinions on the showing. If a producer, it will be first Viola lime well in the state.

WALTER KUHN Drilling Co., which has been operating out of offices at Hugoton, in the center of the Hugoton gas field of southwestern Kansas and northwestern Oklahoma, has moved its headquarters to Wichita and will extend its activity throughout the state.

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Eastern Texas Wildcatting on Increase With 7 New Tests

By R. MARNE SANFORD

DALLAS, Tex., Sept. 9.—In eastern Texas seven new exploratory tests were either definitely staked or tentatively announced during the week.

Fannin County, one of the little-explored areas of northern East Texas, was given two wildcats, both in the central part. Damon Oil Co. of Tulsa let contract at the close of the week for the drilling of its 1 A. L. Chaffin, J. C. Ketcham Survey, on a block of 5,000 acres about 4 miles from Bonham. It is contracted to 5,000 ft. and is expected to test the lower Glen Rose and the Travis Peak sections. East of this location H. T. Flemming of Kilgore received permit for his 1 Frank Welch, E. J. Allen Survey, 4 miles northwest of Honey Grove. It is located on a large block, long reported in line for a wildcat test. The hole will be carried to 4,000 ft.

Wood County was given a deep operation by Amerada Petroleum Corp. as its 1 J. J. Lloyd, located on a 164-acre tract in the William Barnhill Survey, about 8 miles north of Quitman. Contract has been let for 6,500 ft. which is expected to take the hole to the Rodessa section of the Glen Rose lime. The location is 4 miles northeast of the recent failure by Plains Production Co. on the Smith tract in the Calderon Survey.

An old wildcat in Camp County was reported to be in line for deepening. It is H. S. Moss 1 Blackstone, NW cor. 50-acre tract in the E. B. Davis Survey, 2 miles south of Pittsburg. The wildcat, which was quit in September of 1939 at a total depth of 4,600 ft., is located slightly more than 5 miles east and a little south of the H. S. Moss 1 Venters, recent deep Pettit lime discovery in Camp County. Definite plans for deepening the old failure have not been released by the operator.

A wildcat was reported in the making for Van Zandt County as Drake Drilling Co. of Tyler announced plans for a shallow test on its 2,000-acre block in the M. J. Russell Survey. The acreage was assembled by Shank & Trawick and the details of the deal between the drilling company and the operators were not released.

In Ellis County rotary tools were being moved to the site of W. E. Butler, Dallas, 1 A. M. Sims, on a block of 8,000 acres assembled by J. M. Mosses and turned in part to Butler for the drilling of the test. The exact location of the wildcat could not be determined, however, work was reported to be starting immediately. The location is about a mile southwest of Bristol.

EASTERN TEXAS COMPLETIONS

EAST TEXAS FIELD

Gregg County

Longview area: Ambrose 3 Jones, 128 bbl., 3,548-90 ft.
Cushing Drilling 23-A Owens, 55 bbl., 3,658-69 ft.
Deep Rock 25 Jones, 66 bbl., 3,532-62 ft.
J. C. Robbins 1 Bruton, 20 bbl., 3,620-85 ft.

Rusk County

Joiner area: Hastings-Dodson 2 Kickerson, 20 bbl., 3,622-56 ft.

Upshur County

Longview area: T. W. Lee 1 Green, 3,760 ft., dry.

EAST CENTRAL TEXAS

Henderson County

Flag Lake field: Hines-Hancock 2 Dillard, 60 bbl., 3,051-55 ft.
Opelika field: Shamrock & Lone Star 1 McGee, 570 bbl. distillate and 7,340,000 cu. ft. gas, T.D. 8,216 ft. (old well reworked).

Titus County

Talco field: Lucey Pet. 17 Williams, 200 bbl., 4,272-84 ft.

DRILLING REPORT

Ellis County

W. E. Butler 1 A. M. Sims, 1 mi. SW Bristol on 8,000-acre block, first report, 3,800-ft. test.

Falls County

Joy Carruth 1 Westbrook, Manchaca Sur., 4½ mi. NE of Chilton, S.D. 42 ft.

Fannin County

H. T. Fleming 1 Welch, E. J. Allen Sur., 4 mi. NW Honey Grove, first report.
Damon Oil 1 A. L. Chaffin, SW cor. 85-acre tract, J. Ketcham Sur., 4 mi. NE Bonham, first report.

Kaufman County

T G. Shaw, Tr. 1 Agnes Wynne, B. S. Newman Sur., 8 mi. E Kaufman, lower Trinity test, base Massive 6,255 ft., T.D. 6,454 ft., S.D.

Leon County

Alexander & Wilhite 1 C. H. Mills, M. Copeland Sur., 2½ mi. E of Normangee, drilling 4,020 ft.

Limestone County

Frank Bryan 1 F. Bevill, J. H. Murray Sur., 1 mi. SW Horn Hill, hole 7° off vertical, P.B. to 1,460 ft. and still 4° off vertical.

Navarro County

Carter 7 Bridwell, M. Shire Sur., ½ mi. N Angus, T.D. 5,991 ft., top sand 5,882 ft., bailing oil.
A. J. Willis 1 Cheney, W. Reed Sur., 12 mi. SE Corsicana, S.D. 802 ft.
Willis 1 Swanson, J. Johnson Sur., S.D. 803 ft.

Red River County

J. F. Morrissey 1 Tyler, James Miro Sur., 3½ mi. SE of Bogata; 5,000-ft. test, 10-in. set at 110 ft., S.D.

Upshur County

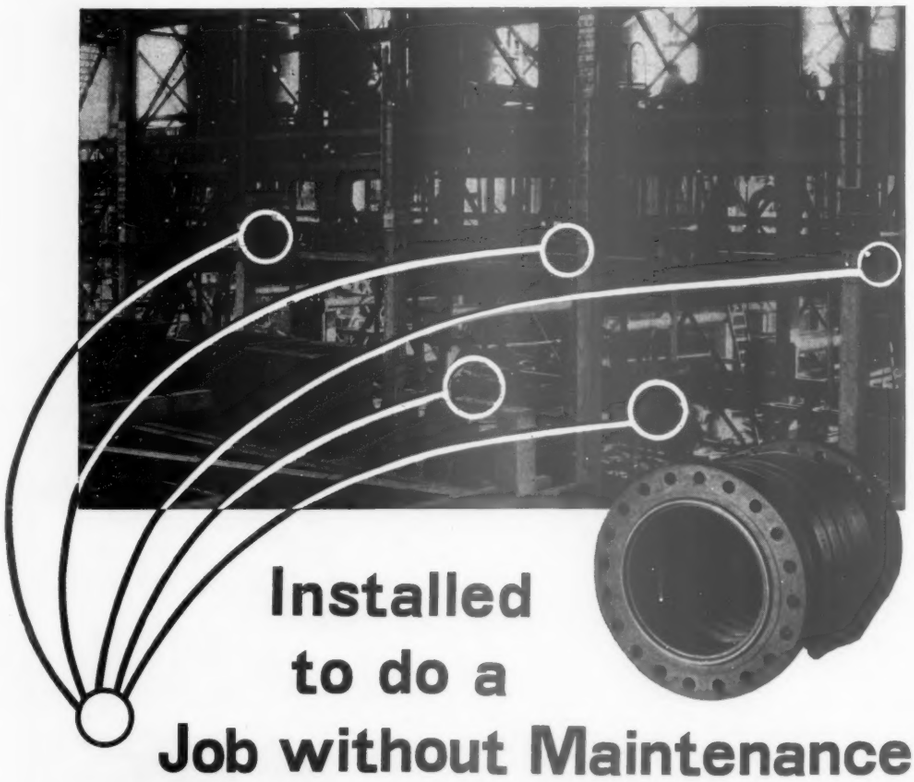
H. C. McGahey 1 Ludie Turner, SE cor. 200-acre tract in A. Butler Sur., top Pecan Gap 2,380 ft., base Pecan Gap 2,970 ft., S.D. 4,211 ft.

Van Zandt County

Clark 1 Hallman, R. T. Wheeler Sur., 4 mi. SE of Van, drilling 3,268 ft., top Pecan Gap 2,555 ft., base Pecan Gap 2,775 ft.

Wood County

Amerada Pet. 1 J. J. Lloyd, William Barnhill Sur., 7 mi. E Yantis, first report.



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Agents in Principal Cities

By
NEIL WILLIAMS

Ogburn Pool Produces From Cockfield; Rowan Extended

HOUSTON, Tex., Sept. 9.—The Ogburn field, northwestern Harris County, opened as a distillate field in June of this year, was converted into an oil field as W. L. Goldston 1 Lenoir Josey flowed 102 bbl. of pipe-line oil in 12 hours through a ¼-in. choke. Tubing pressure was 2,200 lb. and casing pressure 2,400 lb. Drilled to a total depth of 6,943 ft., 5½-in. casing was cemented at 6,938 ft. preparatory to testing the discovery sand which was cored at 6,937-42 ft. A drill-stem test of the section recovered 700 ft. of gas-cut mud, the hole was plugged back, and the well completed in what is believed to be the Cockfield sand at 6,654-58 ft. The well is located about 3,600 ft. northwest of the discovery well, which was completed as a distillate producer in the Yegua formation at 6,918-26 ft. The 6,600-ft. sand in the discovery well is reported to have carried salt water.

With the completion of the above test, interest in the area is now centered on Christian Carpenter Drilling Co. 1 V. T. Rorick, about 3,200 ft. southwest of the distillate producer, which is drilling in sandy shale below 5,400 ft. and should reach the 6,600-ft. horizon during the coming week.

Rowan Field Extension

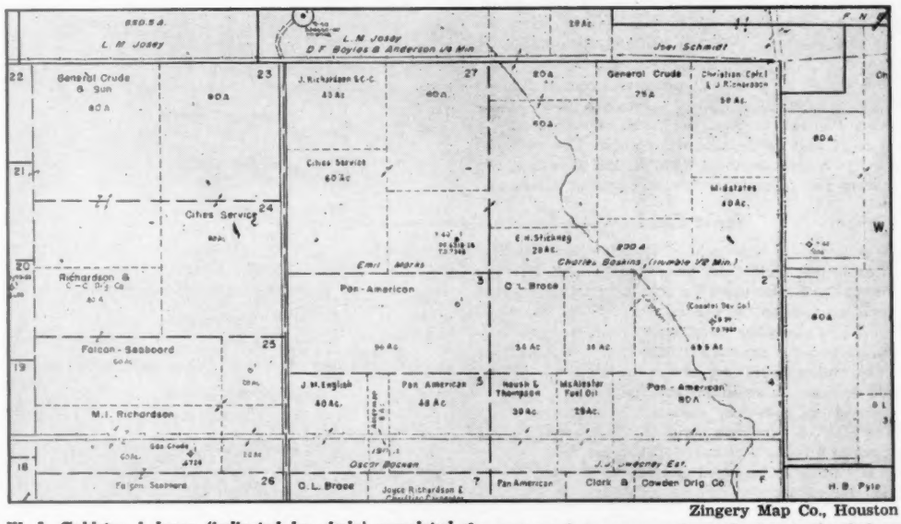
Production in the Rowan field, Brazoria County, was extended 1,200 ft. northeast with the completion of Rowan Drilling Co. 2 Hubbard which flowed 168 bbl. of 41.9-gravity oil on a 24-hour potential test through a ⅛-in. choke. Tubing pressure was 1,640 lb. and casing pressure 1,875 lb. The well was drilled to a total depth of 9,005 ft. and production is from perforated casing in the Frio formation at 8,516-45 ft. The producing horizon of the well is slightly higher than the discovery well which was completed at 8,538-54 ft. The rig is expected to be moved to 1 E. L. Bradbury, an outpost test, 467 ft. from the northwest line and 467 ft. from the northeast line of a 189.26-acre tract in the Kate R. Ehrmann Survey. The well will be drilled by Rowan, Nichols Oil Co., and Texas Gulf Producing Co.

In the same county and located in the Bailey's Prairie prospect, Glenn McCarthy 1 W. B. Munson is waiting orders after the well tested salt water, and oil on a drill-stem test through perforated casing at approximately 11,345-50 ft. This well was drilled to a total depth of 11,860 ft. and the production test was made after the hole had been cleaned of stuck tubing to a total depth of 11,525 ft. An electrical survey is reported to have shown several favorable sand sections.

Matagorda County Wildcat

Location for an interesting wildcat was announced for Matagorda County by Ohio Oil Co., which is scheduled to move in material for 1 H. E. Blackburn in tract No. 2, in the F. Pettus Survey. The location is north of two deep tests recently drilled by the Texas Co. in the Sugar Valley area. The company also entered the Hillje field, Wharton County, by staking location for two wells, while in the North Markham field, Matagorda County, location was announced for 2 Cornelius, about 1,300 ft. east of 1 Cornelius.

North of the deep production on the southeast flank of the Esperson field, Liberty County, W. P. Luse was preparing to spud 1 John H. Hlavaty in the F. M. Gardner Survey, a projected 7,000-ft. test on the east flank of the structure.



Zingery Map Co., Houston

W. L. Goldston 1 Josey (indicated by circle) completed the past week to open crude production in the Ogburn distillate field, Harris County

W. R. Davis Co., Inc., staked location for another test in the Garwood area, Colorado County. The location is on the L. E. Brownston lease in the F. S. Wooly Survey, about 12 miles west of the town of Garwood, and 2 miles southwest of the company's 1 McLane, a deep test, which logged several showings in the Wilcox formation.

In the same county and located in the Sheridan field, Shell Oil Co., Inc., is cementing casing preparatory to testing 2 Plow Realty Co., a south offset to the discovery well. A drill-stem test the previous week at 8,127-31 ft. recovered 910 ft. of pipe-line oil and the hole was drilled to a total depth of 8,157 ft.

Humble Oil & Refining Co. is moving a drilling barge to its fourth location in Galveston Bay. The new location is 4-A-203 State, 1 mile north of 1-A-247 State, recently completed as a distillate producer. The company has three other operations which are nearing interesting depths, while permits to drill several other locations have been applied for. Exploration of leases in the bay together with the recent showings of previous dry holes is leading to a large-scale drilling program. Standard Oil Co. of Texas 13-66 State, north of Humble's activity, is drilling below 8,495 ft., after making an electrical survey, while Texas 1-237 State, in the Bolivar area, is drilling in shale below 5,397 ft.

Offshore from Jefferson County in the Gulf of Mexico, British American Producing Co. 1-72 State is drilling in sandy shale below 5,935 ft., while location was made by the same company for 2 State, in tract No. 71.

TEXAS GULF COAST COMPLETIONS

Brazoria County

Lockridge field: Kirby 2 Baker, 17 bbl., 5/32-in. choke, Top sand 6,358 ft., T.D. 6,368 ft.
West Columbia field: Texas 15 Phillips, 551 bbl., ¼-in. choke, top sand 5,608 ft., T.D. 5,640 ft.
Texas 96 Hogg, 95 bbl., 9/64-in. choke, top sand 3,618 ft., T.D. 3,622 ft.

Chambers County

Anahuac field: Humble 31 Tyrell, 736 bbl., ¼-in. choke, top sand 7,023 ft., T.D. 7,080 ft.
South Cotton Lake field: Humble 4-D Lawrence, 37 bbl., ⅛-in. choke, top sand 6,503 ft., T.D. 6,509 ft.

Harris County

Clear Lake field: Humble 52-C West, 144 bbl., ⅛-in. choke, T.D. 5,907 ft.
Fairbanks field: Amerada-Stanolind 26 Foley, 169 bbl., ⅛-in. choke, perf. casing 6,843-48 ft., T.D. 6,850 ft.
Humble field: Texas 35 Carroll O. & G. Co., 80 bbl., ¼-in. choke, perf. casing 2,460-75 ft., T.D. 2,815 ft.
Tomball field: Humble 20 Reid, 552 bbl., ¼-in. choke, T.D. 5,567 ft.

Jackson County

Lolita field: Magnolia 3 Mitchell, 176 bbl., 7/64-in. choke, T.D. 5,929 ft.
West Ranch field: Magnolia 99-A West, 513 bbl., ¼-in. choke, top sand 5,758 ft., T.D. 5,788 ft.
Magnolia 4 Schueche, 632 bbl., ¼-in. choke, T.D. 5,771 ft.
Shell 3 Stephan, 518 bbl., ¼-in. choke, top sand 5,737 ft., T.D. 5,762 ft.
Wildcat: Stanolind 1 American National Realty, dry, T.D. 9,010 ft.

Jefferson County

Lovells Lake field: Humble 23 Broussard, 176 bbl., ⅛-in. choke, top sand 7,723 ft., T.D. 7,724 ft.
Humble 16 Jefferson Land, 143 bbl., ⅛-in. choke, top sand 7,777 ft., T.D. 7,778½ ft.

Wharton County

Pickett Ridge field: Texas 40-A Pierce, 105 bbl., ⅛-in. choke, T.D. 4,794 ft.
Withers field: Texas 58-B Pierce, 91 bbl., 10/64-in. choke, perf. casing 5,540-42 ft., T.D. 5,544 ft.

TEXAS GULF COAST DRILLING REPORT

Austin County

John Mayo et al 1 Bollmann, New Ulm area, Thomas Hill Sur., drilling shale in Reklaw formation 6,557 ft.

Chambers County

Humble 2-A-246 State, Galveston Bay, drilling sandy shale 9,270 ft., top Frio 8,710 ft.
Humble 4-A-203 State, Galveston Bay, first report, driving piling.
Humble 1-C-45 State, Galveston Bay, drilling shale 7,715 ft.
Humble 1-B-288 State, Galveston Bay, drilling shale 7,965 ft.
Standard of Tex. 1-66 State, Galveston Bay, top Frio 7,692 ft., T.D. 8,495 ft., running electrical survey.

Galveston County

Continental 1 W. S. Davis, S of Clear Lake field, M. Muldoon Sur., drilling shale 7,860 ft.
Stanolind 2 Hulen, Alta Loma field, S.D. 11,117 ft.
Texas 1 E. J. Kainer, Algoa prospect, John Brown Sur., top flat Marginulina 8,067-98 ft., round Marginulina 8,250-79 ft., drilling shale 9,750 ft.
Texas 1-237 State, Galveston Bay, drilling shale 5,397 ft.

Harris County

H. C. Cockburn 1 Burkitt, Mount Houston area, drilling shale 2,155 ft.
Cities Service 1 Kuehn, G. L. Bellow Sur., NW of Houston, moving in rig.

Jefferson County

British American 1-72 State of Texas-Gulf of Mexico, drilling sandy shale 5,935 ft.
Hebert & Smith 1 Yount, SW of West Beaumont field, A Houston Sur., prepare to spud.
Sun 7 Broussard, La Belle field, T.D. 7,475 ft., perf. casing 7,264-71 ft., flowing oil and wash water.

Liberty County

John Mayo et al 1 R. D. McDonald, SW of Cleveland field, cored sand and sandy shale, slight show of oil 5,941-51 ft., S.D. 6,001 ft.
Gulf 1 Phoenix Development Co., deep test, Hull field, top Eponides Yeguaensis 6,124-55 ft., drilling shale 7,085 ft.
Stanolind 3 Seaberg, Martha field, recovered oil and salt water 8,124-32 ft., squeezed perf., reperf. 8,123-31 ft., testing.

San Jacinto County

Harrison & Abercrombie 1 Sun Oil Co., Shepherd area, William Hays Sur., T.D. 8,572 ft., D.S. stuck.

Tyler County

Louis Franklin 1 Schlicher-Thomas Co., A. G. Parker Sur., coring shale 2,095 ft.

Wharton County

J. B. Ferguson 1 F. F. Damon, NE of Pledger field, R. Kykendall Sur., drilling shale 3,490 ft.

New Sands, Extensions Found In Several Coastal Fields

By NEIL WILLIAMS

NEW ORLEANS, La., Sept. 9.—Humble 1 Leger, reported the previous week as a probable pool opener for the South Crowley prospect, Acadia Parish, flowed 779 bbl. of 36-gravity oil on a 24-hour gage flowing through a ¼-in. choke. Tubing and casing pressures were equalized at 1,200 lb. The sand section was topped at 7,600 ft. and was cored to a total depth of 7,612 ft. Seven-inch casing was cemented at 7,598 ft. The well is an east offset to the company's 1 Boyd Finch, which was drilled in 1938 and flowed pipe-line oil for several days before it was abandoned due to salt-water encroachment. Correlated with the Finch well, 1 Leger is 110 ft. structurally lower. The well is located on a geophysical block which is controlled largely by Humble.

Considerable interest was centered on the southeast flank of the old Welsh dome, Jefferson Davis Parish, where D. A. Cheesman and Cranston 1 Bourgeous showed for a distillate producer on a drill-stem test. The well was drilled to a total depth of 5,934 ft. and 5½-in. casing was cemented at 5,625 ft. after which the well was plugged back to 5,595 ft. On a 11½-hour drill-stem test through perforated casing at 5,581-93 ft., the well flowed an estimated 3 to 4 bbl. of 58.3-gravity distillate per hour and then went dead when the well sanded up. The hole was cleaned out, and when tested again it blew dry gas, and the operators set a retainer at 5,475 ft., preparatory to testing at 5,320-25 ft. An electrical survey showed 6⅓ ohms resistivity on normal curve and 4 ohms resistivity on the third curve at 5,582-90 ft., while another sand section was logged at 5,275-60 ft. with the bottom part of the section showing salt water at 5,342-60 ft.

In the Erath field, Vermilion Parish, ⅛ mile due west of the discovery well, Humble 1 Vermilion Parish School Board, is coring in sandy shale below 11,051 ft. and is reported to be correlating 45 ft. higher than the discovery well, which was completed in sand at 11,378-89 ft.

Barataria Field

In the Barataria field, Jefferson Parish, California 2-B Community, located on the northeast side of the field in 1-16s-23e, flowed 316 bbl. per day through a 5/32-in. choke. The hole is bottomed at 8,773 ft. and the completion was made with 7-in. casing cemented at 8,756 ft. This is the second producer to be completed in this sand section, which is the deepest horizon in the field. The discovery sand is at 8,100-8,200 ft.

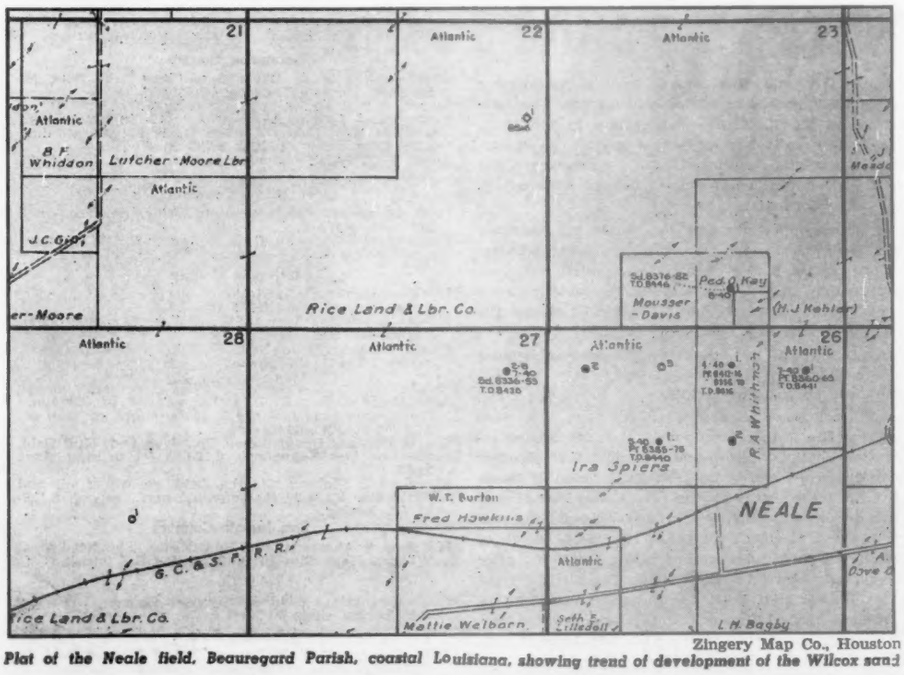
The North Crowley field, Acadia Parish, was extended a short distance to the north with the completion of Vincent & Welch 1 Harmon, which is flowing at the rate of 650 bbl. per day through a ⅛-in. choke, while cleaning out through perforated casing at 8,787-92 ft. Tubing pressure was 1,200 lb. and casing pressure 1,275 lb. Location is in 27-8s-1e, on a Sun Oil Co. farmout lease.

Humble 2-B Wilberts & Sons Lumber Co., completed in April of this year to open the first production on the Bayou de Glaize salt dome, has been abandoned due to salt-water encroachment, and the company is preparing to start drilling operations on 3-B Wilberts, which will be drilled directionally from the same derrick floor. No. 2-B was completed through perforated casing at 8,648-57 ft. for an initial production of 345 bbl. and the hole was finally abandoned after deeper drilling failed to find additional sands.

Plymouth 1 LeBlanc, the second well drilled in the Bayou Pigeon field, Iberia Parish, and east of the discovery well, is cleaning out through a ⅛-in. choke flowing 5⅓ bbl. of fluid per hour, of which 30 per cent is oil and the balance wash water. The well was drilled to a total depth of 8,076 ft. and is testing the discovery pay through perforated casing at 8,054-68 ft.

Neale Field

With two more wells scheduled to be placed on production in the Neale field, Beauregard Parish, Atlantic Refining Co. is increasing its activity with the staking of two more locations, one of which is an important outpost and the other an offset to the discovery well. Location is being cleared for 1-C Rice Land & Lumber Co., 1½ miles southwest of production in 28-3s-11w, while 3 Spiers, a south offset to the discovery well, is located in 26-3s-11w. Casing was cemented in 2 Spiers after oil sand was cored in the 8,300-ft. Wilcox pay, while 2 D. A. Whitmer, 1,320 ft. south of production, is waiting to be gaged after cleaning from a total depth of 8,450 ft.



Zingery Map Co., Houston

Plat of the Neale field, Beauregard Parish, coastal Louisiana, showing trend of development of the Wilcox sand

On the west side of the Lockport field, Calcasieu Parish, Magnolia 11 Farquhar is plugging back to test a new sand at 6,594-6,614 ft., following a production test at 6,704-12 ft. which tested 30 bbl. of distillate and considerable salt water.

LOUISIANA GULF COAST COMPLETIONS

Acadia Parish

South Crowley field: Humble 1 Leger, 779 bbl., ¼-in. choke, sand 7,600-12 ft., T.D. 7,612 ft.

Cameron Parish

West Hackberry field: Superior 3 Vincent, 213 bbl., 18 hr., 12/64-in. choke, perf. casing 8,703-38 ft.

East Baton Rouge Parish

University field: Sugarfield 1 Griffith, 288 bbl., ⅛-in. choke, perf. casing 6,780-90 ft., T.D. 6,824 ft.

Evangeline Parish

Ville Platte field: Continental 5 Corell, 369 bbl., ⅛-in. choke, T.D. 10,271 ft.
Continental 6 Tate, 164 bbl., ⅛-in. choke, T.D. 10,152 ft.

Iberia Parish

New Iberia field: Texas 18 Duhe, 260 bbl., 12/64-in. choke, sand 3,830-52 ft., T.D. 3,860 ft.

Iberville Parish

Bayou Blue field: Markey and Crosby Drilling Co. 4 Baiste, 190 bbl., ¼-in. choke, perf. casing 1,619-22 ft., T.D. 1,772 ft.

Jefferson Parish

Lafitte field: Texas 7-A Madison Realty Co., 724 bbl., ¼-in. choke, sand 10,059-84 ft., T.D. 10,144 ft.

Plaquemines Parish

Wildcat: Gulf 1-E Buras Levee, dry 11,491 ft., T.D.
Grand Bay field: Gulf 9-A Grand Prairie, 410 bbl., ⅛-in. choke, perf. casing 8,084-94 ft.

Rapides Parish

Wildcat: Rantex 1 Clark, dry 7,696 ft., T.D.

St. Mary Parish

Charenton field: Pan American 2-B Veeder, 130 bbl., ¼-in. choke, T.D. 2,710 ft.

Beauregard Parish

Neale field: Atlantic 1 Kay unit, 280 bbl., ¼-in. choke, sand 8,375-90 ft., T.D. 8,447 ft.

LOUISIANA GULF COAST DRILLING REPORT

Ascension Parish

Humble 4-B Community, Darrow dome, drilling shale 9,686 ft.

Cameron Parish

Superior 3 State, Calcasieu Lake dome, drilling shale 12,105 ft.
Gulf 27 M. P. Irwin, East Hackberry field, drilling sand and shale 5,765 ft.
Harrison & Abercrombie 3 Berdine, East Hackberry field, drilling shale 7,104 ft.

Iberville Parish

Superior 1 E. B. Schwing, Bayou Blue field, drilling shale 10,140 ft.

Jefferson Parish

Shell 1 State, Bayou des Illettes area, 27-20s-24e, coring shale 10,350 ft.
Texas 1 State Bayou Perot, 26-16s-22e, drilling shale 9,548 ft.

Jefferson Davis Parish

Continental 3 Calcasieu National Bank, South Roanoke field, drilling shale 6,812 ft.

La Fourche Parish

Mikton Oil Co. 4 Martinez, La Fourche Crossing field, drilling shale 9,427 ft.
Tide Water Associated 2 Delta Farms, SW of discovery well, Delta Farms field, drilling sand and shale 10,517 ft.
Fohs 12 State, Lake Long field, top sand 9,332 ft., 6-in. casing cemented on bottom at 9,365 ft.
Amerada 1 Moore, Raceland field, drilling shale and sand 8,224 ft.

Plaquemines Parish

Gulf 1 State, Black Bay prospect, drilling shale 7,144 ft.
Humble 45 Orleans Levee Board, Potash dome, T.D. 8,000 ft., prepare to test.

St. Charles Parish

Texas 1 State, Lake Salvador, NW of Barataria field, 26-16s-22e, drilling shale 10,210 ft.

St. James Parish

Shell 1 Federal Land Bank, La Pice field, drilling shale 7,968 ft.

St. Mary Parish

Texas 5 Was Bayou, Bateman Lake field, 21-5s-12e, T.D. 10,944 ft., prepare to test.
Texas 1 Landers, N extension test to Bateman Lake field, T.D. 11,487 ft., prepare to test.
Texas 4 St. Mary Land Co., Horseshoe Bayou field, drilling shale and lime 10,745 ft.

Terrebonne Parish

Stanolind 1 State, deep test, Bay Junop salt dome, T.D. 11,000 ft., awaiting orders.
Texas 5 State, Coon Point prospect, drilling shale at 8,965 ft.

La.-Ark. Fields

(Continued from Page 84)

3,036-38 ft., would not flow, hole full oil, pumped off in 6½ hours from 2,200 ft. and arranging to lower rods and tubing, old T.D. 4,020 ft.

Lincoln Parish

C. H. Lyons 1 Dubach Lumber Co., SW NW 30-20-3w, rigging up.

Red River Parish

Thornton & La Croix 1 Prudential Life Insurance Co., 2,160 ft. S, 440 ft. E of NW cor. 31-11-9, reaming to set casing 1,317 ft.

Union Parish

Tiki Exploration Co. 1 Jones, SW SW NE 30-21-3w, S.D. 3,200 ft.

ARKANSAS COMPLETIONS

Buckner—Columbia County

G. S. Hammond et al 1 S. T. Crone, SE SW 9-16-22, 192 bbl., 20/64-in. choke, 2 per cent b.s. and w., T.P. 80 lb., C.P. 210 lb., T.D. 7,297 ft.

Magnolia—Columbia County

Normandie 1 C. E. Crumpler, C S 30-acre, SE SE 18-17-19, 235 bbl., 12/64-in. choke, T.P. 150 lb., C.P. 950 ft., T.D. 7,637 ft.

Nick Springs—Union County

Fohs 1 Rowland, NE NE SE SW 31-17-14, 100 bbl., ¼-in. choke, T.D. 3,993 ft., set packer 3,123 ft.

Urbana—Union County

McCreslen 4 J. C. Parker, SW NW NE 3-18-13, 110 bbl., 10/64-in. choke, T.P. 250 lb., C.P. 400 lb., T.D. 3,018 ft.

ARKANSAS FIRST REPORTS

Magnolia—Columbia County

Louark 1 D. E. Boothe unit, NE SW 20-17-19.

Troy—Nevada County

Berry Asphalt 4 M. Jackson, 265 ft. NE cor. NW NE 9-14-20.

WILDCAT OPERATIONS

Columbia County

Louark 1 Lorgino et al, NW SE 10-18-10, 13⅜-in. casing 662 ft., drilling shale 2,935 ft.

Dallas County

H. H. McBride et al 1 Southern Kraft Corp., SE SW 16-9-16, S.D. 907 ft.

Howard County

Miller & Fletcher 1 Dierks Lbr. Co., SW SW 7-8s-28w, S.D. 260 ft.

McKamie—Lafayette County

Atlantic 2 Bodcaw Lbr. Co., SW SE 29-17-23, top Buckner 8,913 ft., drilling lime 8,973 ft.

Lonoke County

Lunnon, Howell & Ford 1 City of Cabot, NE Lot 1, Blk. 6, 18-4n-9w, S.D. 1,300 ft.

J. F. Russell 1 J. T. Gunter, 440 ft. N, 577 ft. W, SE cor. 17-5n-10w, S.D. 2,775 ft.

Prairie County

Hazen 1 Fidelity Mutual Life Ins. Co., NE NE NE SW 16-2n-6w, S.D. 85 ft.

Saline County

Tedford Drlg. 1 Williams, 1,295 ft. SE No. 1, 31-3s-15w, S.D. 390 ft.

FIRST REPORTS

Wildcat—Cass County

Henry A. King 1 Heilborn & Kay, D.&S.E. Sur., spudding.

Waskom—Harrison County

Arkansas Louisiana Gas 1 Fields, 900 ft. SE cor. White Sur.

Wildcat—Shelby County

Superior 5 Pickering Lumber Co., Gonzales Sur.

EAST TEXAS BORDER WILDCATS

Wildcat—Cass County

Max Agress 1 Clark & Boise Lbr. Co., 620 ft. N, 495 ft. E, SW cor. 104-acre tract, Ben Hawkins Sur., S.D. 1,511 ft.

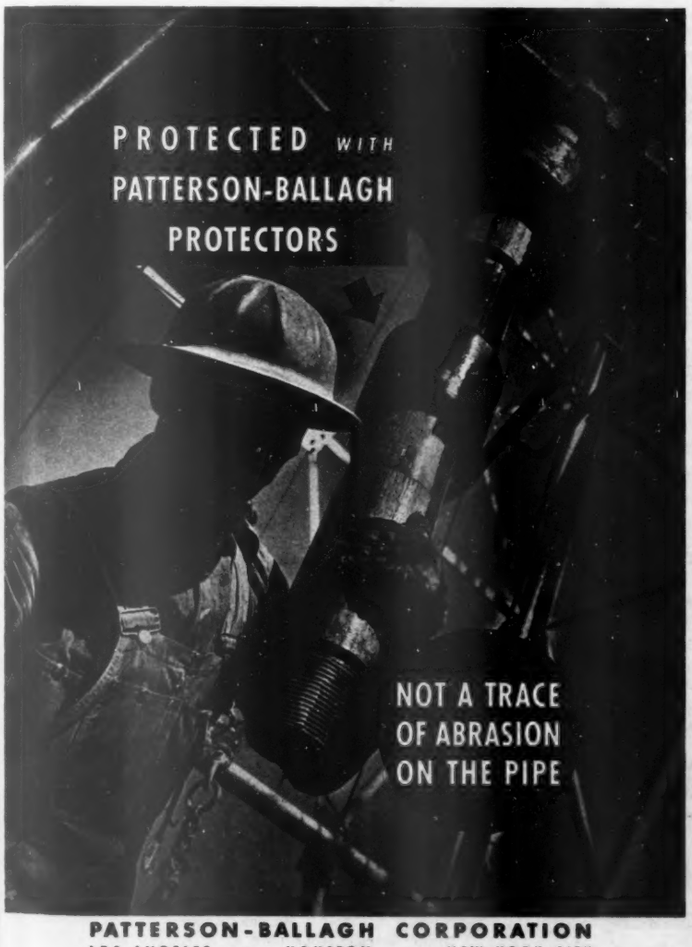
Shelby County

W. C. Parker 1 F. G. Wiley, 480 varas S, 240 varas W, NE cor. 94-acre tract, A. K. English Sur., S.I., C.P. 230 lb., T.D. 3,482 ft.

P. & B. Oil Co. 2 W. C. Windham, A. K. English Sur., S.I., T.D. 3,362 ft.

Paul Pewitt et al 1 J. S. Swann, 1,400 ft. N, 470 ft. W, SE cor. 100-acre tract, Ann Gray Sur., T.D. 4,070 ft., washing to bottom to deepen.

Superior 3 Pickering Lumber Co., 1,620 ft. S, 660 ft. W, easterly NE cor. Thomas Haley Sur., drilling 6,315 ft., show gas 5,637 ft.



PATTERSON-BALLAGH CORPORATION
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Natural Gas Carburetion BY ENSIGN

A few moments each year we like to raise up from our work, take a fresh breath and check our position by the compass. The best compass we know of is the reaction of our old and valued customers.

An interesting observation made at the 1940 Tulsa Oil Show, in May, revealed a total of 153 engines equipped for Natural Gas Carburetion. Of this number 138 were Ensign equipped leaving 15 installations for all other makes. This ratio has consistently been in favor of Ensign for over eight years, during which time more than 50,000 Ensign Natural Gas installations were made. These figures we believe, are significant.

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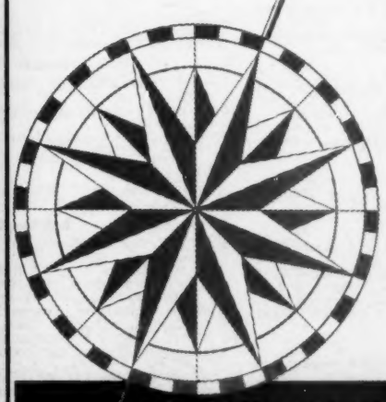

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Start Second Maryland Well To Test Devonian Horizons

By STAFF CORRESPONDENT

PITTSBURGH, Pa., Sept. 9.—In Garrett County, western Maryland, a second wildcat has started. It is located at Rock Lodge, summer home of J. A. Bloch, on the west side of Deep Creek Lake and starts at a surface elevation of about 2,600 ft. The operators are George L. Yaste et al, the contractor D. A. McKnight of Butler, Pa. It is south of the small town of McHenry. The present depth is 950 ft. and a 13-in. hole is being carried. A drilling machine is being used which will drill to the limit of its capacity, unless production intervenes, and decision then will be made whether or not it will be drilled to the lower Devonian.

About 7 miles north of McHenry is located Accident, just northwest of which the New Penn Development Co., William E. Snee, and others are drilling a wildcat on the Humberson farm on the Accident dome, a rather prominent structure. The test lost action of the tools at 6,890 ft. due to deviation from vertical at about 6,000 ft. Several weeks' time has been lost trying to sidetrack the hole to recover the vertical. None of the lower Devonian markers had been identified.

During the past week in the lower eastern fields, 25 operations were completed of which 4 were dry holes, 12 gas wells, one input well for water flooding, and 8 oil producers with a daily initial of 62 bbl.

SOUTHEAST OHIO

In Mahoning County Magnolia Petroleum Co. bottomed the test on the F. M. Fields farm, Section 19, Berlin Township, at 5,206 ft. and plugged it as a dry hole. It was void of production in the Clinton and Red Medina with a small oil showing in the Newburg.

In Geauga County East Ohio Gas Co. (Carter) shut down at 3,676 ft. in the test on the George W. Cryle farm, Lot 1, Tract, Chardon Township. The test was 50 ft. in the Red Medina and void of any showing. In Lake County this company is drilling at 2,500 ft. in the test on the Andrews farm, Lot 90, Kirkland Township, with the Big lime at 1,800 ft.; Oriskany sand with water at 2,185-2,200 ft. The water was shut off with 6⅝-in. casing run to 2,278 ft. In Concord Township, Lot 15, of this county, these operators are drilling at 1,832 ft. in the test on the F. L. Mather farm with the top of the Big lime at 1,832 ft.

COMPLETIONS

Athens County

Carthage Township: C. W. Nuzum et al 1 C. R. Swisher, Sec. 16, dry, Keener, 1,296 ft.
Lodi Township: A. D. Townsend 3 L. Douglas, Frac. 23, 90,000 cu. ft. gas, second Berea, 1,486 ft.

Holmes County

Prairie Township: J. C. Moore 1 W. F. Kendall, Sec. 17, dry, Berea, 820 ft.

Jefferson County

Cross Creek Township: R. J. Braden 17 Calvary Cemetery, SE Sec. 6, 5 bbl., Berea, 1,617 ft.

Licking County

Mary Ann Township: Copper Head O. & G. 2 Grace C. Varner, Sec. 10, 8 bbl., Berea, 583 ft.

Medina County

Chatham Township: Marine Trust A10 Daniel Ross, Lot 4, Tract 13, 5 bbl., Berea, 434 ft.
Marine Trust A11 Daniel Ross, 5 bbl., Berea, 373 ft.
Marine Trust A12 Daniel Ross, 5 bbl., Berea, 384 ft.
Marine Trust A14 Daniel Ross, 5 bbl., Berea, 425 ft.
Marine Trust O12 Daniel Ross, input water flood, 442 ft.

Monroe County

Bethel Township: G. W. Burkhart 3 Allie Beardmore, Sec. 35, 160,000 cu. ft. gas, Lime, 1,440 ft.

Perry County

Clayton Township: B. G. Davis et al 4 Mrs. C. A. Beacham, NE Sec. 17, 34 bbl., Clinton, 3,311 ft.

SOUTHWEST PENNSYLVANIA

On Chestnut Ridge in South Union Township, Fayette County, Peoples Natural Gas Co. is drilling 2 Piedmont Coal Co. at 5,788 ft. and is not through the cement set to straighten the hole. In No. 3 this company is drilling at 1,290 ft. Here New Penn Development Co., William E. Snee, and others have reached 6,958 ft. in deepening 2 Summit Hotel, or 124 ft. below the top of the Oriskany sand. In North Union Township Wasson and others are down 3,470 ft. in 2 J. H. Sorg.

On Laurel Ridge in Stewart Township, Fayette County, New Penn Development Co., William E. Snee, and E. G. Mueller are drilling at 7,992 ft. in the test on the Gregg L. Neel farm. Several thin lime sections have been drilled through in the last 150 ft., but none identified as Onondaga.

Greene County

Gilmore and Wayne townships: H. D. Freeland et al 1 R. B. Headley, 600,000 cu. ft. gas, Big Injun 2,045 ft., gas 2,153-65 ft., T.D. 2,165 ft.
Wayne Township: Green County Gas 1 William Pratt, 65,000 cu. ft. gas, Bayard 2,948 ft., gas 2,950 ft., T.D. 2,992 ft.

Washington County

South Franklin Township: H. V. Sprowls et al 1 Clarence Vankirk, drilled deeper, dry, 2,760 ft.

Westmoreland County

Allegheny Township: Peoples 1 A. J. Idings, small gas, T.D. 3,864 ft.
Washington Township: Peoples 2 J. F. Young, small gas, T.D. 4,377 ft.

DRILLING REPORT

Armstrong County

Cowanshannock Township: Peoples 1 Michael Miketa, 350 ft.
Peoples 1 Jay Kough, rigging up.
Equitable Gas 1 Earhart heirs, drilling deeper, 2,280 ft.
Kittanning Township: Local Co. 1 G. A. Scholl, 180 ft.
Mahoning Township: John Wray et al 2 King Shaffer, 650 ft.
Parks Township: T. W. Phillips 1 France Klingensmith, 2,230 ft.
Plum Creek Township: Wm. McCollins 2 Add Reefer, S.D., testing, 1,727 ft.
Shelocta Gas 1 Amos Boyer, 225 ft.
South Bend Township: Equitable Gas 1 Margaret Claypool, building rig.
Wayne Township: Watson et al 2 W. D. McIntire, 725 ft.
Humphrey, Stone & McCall 1 James Bittinger, 110 ft.
Penn Wayne Gas 2 Edward Clever, building rig.

Clarion County

Limestone Township: Peoples 2 Mrs. M. G. Brocius, rigging up.
George Hall 2 C. Fairman, 260 ft.
Porter Township: Climax Brick Co. 1 Samuel McMaster, building rig.
T. W. Phillips 6 Frank Shreffler, 1,150 ft.
Monroe Township: Owens Illinois Glass 1 J. C. Heinrick, 380 ft.
Red Bank Township: John Lasher et al 1 Cora M. Truitt, 1,940 ft.
O. H. Culbertson 2 Edward Bowersox, 570 ft.
T. W. Phillips 1 Nathan Wolfgang, 640 ft.

Fayette County

German Township: J. H. Carnell 1 Marion Kurzanskuski, 1,970 ft.
Greensboro Gas 1 C. L. Springer, 2,570 ft., Fifty-foot sand 2,377-2,446 ft., 33,000 cu. ft. gas 2,377 ft.
Nicholson Township: Duquesne 1 Ivan Mallery, 1,318 ft.

Greene County

Center Township: J. B. Orndoff 3 Mattie I. Scott, 1,930 ft.
Jackson Township: Equitable Gas 479 H. H. Smith, 1,025 ft.
Monongalia Township: John Ingram et al 1 Bliss Donham, 2,542 ft.
Morris Township: Romney Rutan et al 1 Alfred Rutan, 2,280 ft.
Richhill Township: Wasmuth & Callahan 1 Daniel Goodwin, 2,250 ft.

Indiana County

Brush Valley Township: T. W. Phillips 1 Alexander Bennett, 2,578 ft.
T. W. Phillips 1 F. W. Ramsey, 785 ft.
Center Township: T. W. Phillips 2 Helvetia Coal Co., 2,704 ft.
South Mahoning Township: John Wray et al 2 James Lukehart, 1,750 ft.
T. W. Phillips 1 Thomas Hoover, 835 ft.
Washington Township: Peoples 1 Calvin Cribbs, 2,041 ft.
T. W. Phillips 2 J. W. Johnston, 1,456 ft.
T. W. Phillips 1 C. M. Brewer, 810 ft.
West Mahoning Township: T. W. Phillips 1 Jesse Williamson, 1,700 ft.
White Township: T. W. Phillips 1 Aber & Altismus, 1,970 ft.
T. W. Phillips 1 Martha B. Campbell, 470 ft.

Westmoreland County

Allegheny Township: Hyde Park Foundry Co. 2 Andrew Grinder, 747 ft.
Bell Township: Peoples 1 John McCreary, 607 ft.
Derry Township: Latrobe Steel Spring 1 Keystone Coal Co., 2,045 ft.

WEST VIRGINIA

In Peytona district, Boone County, Owens, Libby-Owens Gas Department has made a location for 16 Bull Creek Coal & Land Co., elevation 794 ft.; Nos. 12 to 15 inclusive were all drilled to the Oriskany sand.

In Grant district, Harrison County, the deep test of the Hope Natural Gas Co. on the G. S. Gribble farm, being drilled by rotary, has reached 6,010 ft. In Tygart district, Wood County, Glen W. Roberts et al are drilling at 3,675 ft. in the test on the C. W. Cook farm.

In Ravenswood district, Jackson County, Columbian Carbon Co. is down 650 ft. in an Oriskany test on the P. F. Riggs farm and Guy Biggess 850 ft. on the H. L. Tallman farm.

COMPLETIONS

Gilmer County

Troy district: Oren Bush 1 Anna Amos, 106,000 cu. ft. gas, Maxton sand 1,480-1,512 ft., gas 1,497-1,507 ft.

Lincoln County

Jefferson district: Brooks Gas Co. 1 A. F. Morris, drilled deeper, 149,000 cu. ft. gas 5 days after shot from Berea and Brown shale; Big lime 1,550-1,735 ft., Big Injun 1,765-1,810 ft., Berea 2,237-61 ft., Brown shale 3,270-3,621 ft.

Monongalia County

Cass district: J. I. Eddy & Co. 1 George A. Morris, 60,000 cu. ft. gas, Fifth sand 3,085 ft.

Putnam County

Curry district: W. C. Kingery et al 2 M. F. Mitchell, 106,000 cu. ft. gas, Big lime 1,358-1,540 ft., Big Injun 1,575-1,610 ft., Berea 2,066-85 ft., T.D. 2,095 ft.
Dennis M. Roy (Lick Creek Gas Co.) 1 Bertha Wood and Layman Melton, 280,000 cu. ft. gas, Big lime 1,565-1,735 ft., Big Injun 1,765-1,800 ft., Berea 2,273-98 ft., T.D. 2,321 ft.

Ritchie County

Grant district: Hogan Gas 1 W. H. Simmons heirs, 100,000 cu. ft. gas, Injun sand, T.D. 2,163 ft.

Wayne County

Union district: United Fuel 4884 Beckley Cline, 20,500 cu. ft. gas, dry, Big lime 1,335-1,525 ft., Big Injun 1,540-1,700 ft., Berea 2,175-2,250 ft., Brown shale 2,625-3,069 ft., T.D. 3,084 ft.

Wood County

Walker district: C. T. Smith 1 Elva Wilson, 5 bbl., Berea 2,166 ft.

ORISKANY FIELDS DRILLING REPORT

Kanawha County

No wells were completed in the Oriskany fields in Kanawha and Jackson counties.

Poca district: Godfrey L. Cabot 4 D. Holmes Morton, S.D. at 1,828 ft., testing Big lime gas gaging 980,000 cu. ft.
Godfrey L. Cabot 4 J. T. Bonham, running 7-in. casing at 4,974 ft.
Columbian Carbon 1 George W. Spencer, top Corniferous lime 4,729 ft.
Columbian Carbon 1 Martha A. Harbert, drilling in Big lime top at 1,787 ft.
Glenn Dearth et al 1 P. S. Berry, top Corniferous lime 4,992 ft.

Jackson County

Ripley district: Godfrey L. Cabot 7 Putnam Co., 5,229 ft. in sand and testing.
United Fuel 4894 W. E. Carson, location.
West Virginia Gas 046 L. T. Huffman, location.

FIRST REPORTS

Boone County

Sherman district: Pure Oil Co. 45 Lafollette, Robson & Pritchard, elev. 797.5 ft.
Owens, Libby-Owens 16 Bull Creek Coal & Land Co., elev. 794 ft.
Peytona district: Columbian Carbon 1 Bull Creek Coal & Lang Co., elev. 1,038.03 ft.

Braxton County

Birch district: Creed Yoak and H. S. Brown 2 Martha J. Shaver, elev. 1,024.8 ft.

Kanawha County

Poca district: Poca Fork O. & G. 1 Siegle Moore, elev. 1,175 ft.
T. C. Matthews 1 Emily Slater Higginbotham, elev. 797.5 ft.
Washington district: Owens, Libby-Owens 1 Mary E. Ballard et al, elev. 639.2 ft.

Fayette County

Falls district: Northeastern Gas 6 Vanetta Land Co., elev. 722 ft.

Logan County

Logan district: South Penn 60 Yawkey-Freeman, elev. 1,571.8 ft.

Pleasants County

Jefferson district: A. F. Marple 18 fee, elev. 945 ft.
McKim district: F. R. Ball 1 L. C. Flemings, elev. 1,036.5 ft.
Grant district: Columbian Carbon Co. 2 Harry G. Hammet, elev. 840.1 ft.

Putnam County

Curry district: Shafer Gas 1 C. E. Hollingsworth, elev. 643 ft.

Ritchie County

Grant district: A. R. Kelly 2 Clem Ingram, elev. 1,060 ft.
Murphy district: Earl Goodwin 1 L. W. Davis, elev. 1,105 ft.
J. F. Deem 1 Lemuel Wilson, elev. 697 ft.

Roane County

Harper district: W. B. Hughes 2 and 3 M. C. and C. B. Bradley, elev. 940.3 ft. and 979.55 ft.

Wetzel County

Grant district: Hope 8528 E. E. Glover, elev. 1,243 ft.
Hope 8527 J. W. Hatfield, elev. 1,272 ft.

Pools Opened in Franklin and Jasper, Prospects in Effingham

By
STAFF CORRESPONDENT

MATTOON, Ill., Sept. 9.—There were 81 completions in Illinois during the past week of which 59 were producers and 22 dry holes. Of the producers, a smaller proportion than usual were from the three big fields, Salem, Louden and Centralia. Salem had 10 completions for a total initial production of 2,858 bbl., while at Louden there were 7 wells producing a total of 945 bbl. The most active areas at present are in the eastern part of the state, notable White and Wayne counties, with 14 and 11 completions, respectively.

In Bond County National Petroleum brought in four wells, making a total of six on the Spindler Investment lease. No. 1 on this lease was the pool opener for the Woburn pool of Bond County. Although three of the four completions came in making water, they were better producers than other offsets to the discovery well.

Montgomery County's play seems to have been short lived as three dry holes and no producers were found during the week.

Centralia's Trenton Tests

Ames 2 Hicks, SW NE SE 12-1n-1w, Centralia's first Trenton producer is not yet officially rated a completion. Originally drilled to 4,123 ft., it showed oil and water and was plugged back to 4,113 ft. where it was reported to be making 300 bbl. Last reports place the well's production at 100 bbl. on the pump. There is some excitement over the fact that Borton 1 Storer, SW NW NE 13-1n-1w, the other Trenton test has shown oil and gas in the Silurian at 3,708 ft. The showing is important mainly in the fact that it calls attention to the Silurian as another potential producing horizon in Illinois.

Other Pool Openers

Franklin County came into the limelight when Manley Oil Corp. 1 Downen in SW SW NW 26-7s-4e came in flowing naturally from the McClosky at 3,100-17 ft The operators estimate the initial production to be between 500 and 800 bbl. The test is 2½ miles south and east of Tompkinville, which will probably give its name to the pool. The geology on which the structure was outlined was worked out by R. E. Schneider and H. A. Brisch, independent geologists. A test, Wilhelm & Gilliam 1 J. R. Searles is being started ¼ mile south in N½ NW NE 34-7s-4e.

Another closely watched test, Johnson 1 Mendenhall, SW SW SE 17-8n-10e, in Jasper County was brought in as a producer in the McClosky to open the Hidalgo pool. The well started in making 200 bbl with 20 bbl. water in 18 hours in pay topped at 2,539 ft. after being plugged back from 2,607 ft. to 2,590 ft. and acidized with 1,000 gal. During the next 5 days test showed declining production until it steadied down to between 75 and 80 bbl. of oil with no change in the amount of water produced.

Two tests in Effingham County were testing shows of oil in the Weller sand. These are Erwin & Barr 1 Dammerman, SW NW SW 18-8n-4e, and R. H. Troop 1 Le Crone, NW NW SW 7-8n-4e Saturation was found at 1,540 and 1,550 ft. respectively. If either of these tests are successful, it will place Effingham County among the list of producers for the first time.

Other Wildcats Showing Oil

Among the many wildcats now nearing completion, more than the usual number show favorable prospects. Allen & Sherritt 2 Harper, SW NW SW 5-11n-14w, has found shows of oil at 2,349 ft., and at 2,358-63 ft., in the Trenton but is drilling ahead below 2,400 ft. Production was obtained from a few wells in the older pools of Clark County in the Trenton so that this test is of considerable interest. However, the Trenton did not pay out, except in the case of wells which had already secured production in higher sands and were later drilled deeper.

In Edwards County Superior 1 M. Works flowed 859 bbl. from McClosky at 3,088-3,102 ft. and three offsets have already been started although the well is not officially listed as a completion. Location is NW NW SW 18-2s-11e. Conner & Arnold 1 F. M. Swick, SE SE NE 17-6n-10e, Jasper County, shows saturation in the McClosky at 2,780-88 ft., and is setting casing preparatory to a test. In White County Carter 1 B. Questell, SW NW SE 2-7s-9e, shows saturation at 1,756-71 ft., and Carter 1 Dagley swabbed 78 bbl. from 1,504-07 ft., after a shot. Both wells are in Township 7s-9e, and are testing.

With declining production in the older fields, more prospecting may be expected and the encouraging shows obtained during the past few weeks indicate that the basin play is far from finished, although there are no Salems, Loudens, and Centralias in prospect at this time.

ILLINOIS COMPLETIONS

Bond County

Nat. Pet. 3 Spindler Inv. ..... NE NW NW 10-6n-2w
Pumped 107 bbl., 10 and 30-qt. shots, Benoist 1,007-23 ft.

Nat. Pet. 4 Spindler Inv. ..... SE NW NW 10-6n-2w
Pumped 216 bbl. and some water, 10 and 40-qt. shots, Benoist 1,007-23 ft.

Nat. Pet. 5 Spindler Inv. ..... NE SW NW 10-6n-2w
Pumped 139 bbl. and some water, 10 and 40-qt. shots, Benoist 1,007-19 ft.

Nat. Pet. 6 Spindler Inv. ..... SE NW NW 10-6n-2w
Pumped 150 bbl. and some water, 10 and 40-qt. shots, Benoist 1,004-20 ft.

Clinton County

D. Duncan 8 Knolhoff ..... SE NW NW 11-1n-2w
Dry, Cypress 1,215 ft., slight show oil, Benoist shaly 1,316-27 ft., T.D. 1,329 ft.

P. Mosebach 1 Kampworth ..... SE SW SW 5-1n-3w
Dry, Devonian 2,431 ft., Cypress 996-1,009 ft., T.D. 2,539 ft., P.B. to 1,006 ft. and shot.

Baldwin 1 Middle Lake Club .... NE NE NE 3-2n-2w
Dry, Louisiana lime 2,585 ft., Devonian 2,660 ft., T.D. 2,740 ft.

Crawford County

Downing-Leaser 1 Ducommun N½ NW NW 31-6n-12w
Dry, 1,000 gal. acid, Devonian 2,675 ft., T.D. 2,905 ft.

Edwards County

Noah & Morrison 1 A. Barnes.... SW NE NE 24-2s-10e
Pumped 100 bbl., Waltersburg 2,370-74 ft.

Jarvis Bros. 1 A. C. Wick ..... NE NW SE 24-2s-10e
Flowed 859 bbl., ¾-in. choke, 5,000 gal. acid, McClosky 3,085-3,102 ft., T.D. 3,107 ft.

Kingwood 2 Johnson ..... NE NE NE 18-3s-11e
Dry, Cypress 2,758 ft., Benoist 2,987 ft., Ste. Genevieve 3,058 ft., T.D. 3,148 ft.

Fayette County—Louden Field

Carter 1 Beck-Dial ..... SW SE SW 35-9n-3e
Pumped 366 bbl. oil and 1½ bbl. water, Cypress 1,499-1,539 ft.

Carter 2 T. Sickles ..... SW NW SW 10-8n-3e
Pumped 132 bbl. 10 and 10-qt. shots, Cypress 1,490-1,531 ft., Paint Creek stray 1,574-93 ft., T.D. 1,698 ft.

Carter 2 B. Dress ..... SE SW NE 12-8n-3e
Pumped 72 bbl., 5-qt. shot, Cypress 1,522-45 ft.

Carter 6 M. Finch ..... NE NE SW 4-7n-3e
Pumped 132 bbl., 5 and 30-qt. shot, Cypress 1,484-1,530 ft., Paint Creek stray 1,554-75 ft.

Carter 5 G. R. Owen ..... SW SE SW 8-7n-3e
Pumped 138 bbl., 20-qt. shot, Cypress 1,477-1,525 ft., Paint Creek stray 1,553-74 ft.

Luttrell et al 2 Tucker ..... SW NW NE 21-7n-3e
Pumped 75 bbl. oil and 15 bbl. water, 30-qt. shot, Cypress 1,512-31 ft., T.D. 1,537 ft.

Texas 2 J. M. Chrisman ..... SE NE NW 7-6n-3e
Swabbed 30 bbl. oil and 2 bbl. water, Cypress 1,577-84 ft.

Fayette County—St. James Field

Ohio 11 C. T. Williams ..... NE NE SW 36-6n-2e
Pumped 97 bbl., 8-qt. shot, Cypress 1,591 ft., T.D. 1,610 ft.

Texas 13 L. Wooten ..... SE SW SE 31-7n-3e
Pumped 105 bbl., 10-qt. shot, Cypress 1,578-88 ft.

Fayette County

C. P. Boland et al 1 Morrow ..... SW SE SE 7-5n-1e
Dry, St. Louis 1,540 ft., lost fish, T.D. 1,911 ft.

Gallatin County

B. Fields 1 Greene ..... SW SE SE 17-9s-9e
Pumped 85 bbl., 90-qt. shot, Waltersburg 1,767 ft., T.D. 1,816 ft.

J. Zeppa 1 C. H. Logan ..... NE NW NE 20-9s-9e
Pumped 127 bbl., dropped to 50 bbl., 100-qt. shot, Waltersburg 1,750-70 ft., T.D. 1,810 ft.

Hamilton County

Pure 2 Cuppy ..... SE NE SW 6-6s-7e
Old well deepened from 2,690 ft., sand 2,690-2,712 ft., pumped 87 bbl. oil and 38 bbl. water, sand 2,712-28 ft., swabbed 51 bbl. oil and water, set perf. liner at 2,646-2,742 ft., pumped 81 bbl. oil and water, T.D. 2,743 ft.

H. Blackstock 1 Stelle ..... NE SW SE 13-5s-6e
Dry, Benoist 3,120 ft., Ste. Genevieve 3,302 ft., Fredonia 3,405 ft., slight show oil 3,405-31 ft., T.D. 3,518 ft.

Jasper County

Johnson 1 Mendenhall ..... SW SW SE 17-8n-10e
Pumped 200 bbl. oil with 20 bbl. water first 18 hr., dropping to 79 bbl. oil and 26 bbl. water the sixth day, 1,000 gal. acid, top Fredonia 2,532 ft., top pay 2,539 ft., T.D. 2,607 ft., P.B. to 2,591 ft., opens Hidalgo pool.

Pure 1 B. Bigard-A ..... N½ SE NW 33-6n-10e
Dry, Fredonia 2,806 ft., T.D. 2,877 ft., P.B. to 2,815 ft.

Pure 1 A. Davidson ..... E½ SE SW 17-5n-10e
Flowed 1,061 bbl., McClosky 2,779-87 ft., T.D. 2,905 ft.

Pure 2 E. Kermickle-A ..... W½ SW SW 32-5n-10e
Flowed 246 bbl., McClosky 2,826-38 ft., T.D. 2,842 ft.

Jefferson County

Carter 1 Staley Purcell ..... NW NW NE 27-1s-2e
Dry, Cypress 1,882 ft., Benoist 2,033 ft., Aux Vases 2,112 ft., Ste. Genevieve 2,172 ft., McClosky 2,295 ft., T.D. 2,401 ft.

T. Harvey 1 Jeff. Coal Corp. .... W½ SE SW 16-4s-2e
Dry, Cypress 2,375 ft., Ste. Genevieve 2,706 ft., St. Louis 2,912 ft., show 2,797-2,930 ft., T.D. 3,000 ft.

Macoupin County

Adams & Laeger 1 W. C. Arter NE NW NW 15-10n-6w
Dry, sand shaled out, T.D. 621 ft.

Madison County

Cherry & Kidd 1 Leet ..... NE NW SE 5-5n-5w
Dry, Kinderhook 1,505 ft., Louisiana lime 1,814 ft., Chattanooga 1,832 ft., Devonian 1,920 ft., T.D. 2,099 ft.

Marion County—Salem Field

Texas 2-E Tate ..... SE SE SW 31-2n-2w
Flowed 527 bbl., 3,000 gal. acid, Devonian 3,425 ft. and 3,440-50 ft., T.D. 3,483 ft., P.B. to 3,473 ft.

Texas 63 City of Centralia ..... NW NE NW 4-1n-2e
Pumped 161 bbl., 65-qt. shot 1,867-1,900 ft., Benoist 1,799 ft., Aux Vases 1,840 ft., T.D. 1,908 ft.

Texas 64 City of Centralia ..... SW NE NW 4-1n-2e
Pumped 154 bbl., 45-qt. shot 1,888-1,935 ft., Benoist 1,787 ft., Aux Vases 1,826 ft., T.D. 1,936 ft.

Texas 75 City of Centralia ..... NE NW NW 4-1n-2e
Pumped 175 bbl., McClosky 2,005 ft., Salem 2,220 ft., shows in Salem, T.D. 2,290 ft., P.B. to 2,190 ft.

Texas 1 H. Corbin ..... NW SW NW 5-1n-2e
Flowed 133 bbl., McClosky pay 1,892-1,903 ft. and 1,910-20 ft., Salem pay 2,130-40 ft., 5,000 gal. acid, T.D. 2,200 ft.

Texas 29 L. Hawthorne ..... NE NW SE 5-1n-2e
Flowed 344 bbl. in 12 hr., 5,000 gal. acid, Devonian 3,417 ft. and 3,432-52 ft., T.D. 3,487 ft.

Texas 36 O. Johnson ..... NW SW SW 5-1n-2e
Flowed 410 bbl., 6,500 gal. acid, McClosky pays 1,922-47 ft. and 1,950-80 ft., Salem pays 2,150-56 ft. and 2,160-67 ft., T.D. 2,180 ft.

Texas 25 E. Tate ..... NE NW NW 5-1n-2e
Flowed 315 bbl., 6,500 gal. acid, McClosky pays 1,900-25 ft. and 1,947-60 ft., Salem pays 2,130-36 ft. and 2,232-48 ft., T.D. 2,290 ft.

Texas 23 G. Cannull ..... NW NE NE 6-1n-2e
Flowed 429 bbl., 5,000 gal. acid, Devonian 3,355-75 ft., T.D. 3,446 ft.

Texas 30 O. Johnson ..... E½ SE SE 6-1n-2e
Pumped 210 bbl., 7,500 gal. acid, McClosky pays 1,910-30 ft. and 1,955-67 ft., Salem 2,142 ft., show 2,153-2,221 ft., T.D. 2,221 ft.

Montgomery County

Lain O. & G. 1 Rogers ..... SE SE NW 31-11n-5w
Dry, T.D. 637 ft.

Randall et al 2 D. Street ..... N½ NE SE 31-11n-5w
Dry, Devonian 1,784 ft., T.D. 1,893 ft.

F. Brown 1 Finley ..... NE NW SE 9-9n-5w
Dry, Pottsville sand 639-62 ft., T.D. 665 ft.

Randolph County

Anderson et al 1 J. B. Cassout .. SW NW SW 16-7s-7w
Dry, Trenton 1,555 ft., T.D. 1,700 ft.

Richland County

C. Hill 1 Wood ..... NE SE SE 21-2n-14w
Dry, Cypress 2,670 ft., T.D. 2,790 ft.

Pure 1 P. Meyers-B ..... E½ NE NE 13-4n-9e
Flowed 146 bbl., McClosky 2,926-35 ft., T.D. 2,953 ft.

Pure 2 J. P. Gray-A ..... W½ NE NW 7-4n-10e
Flowed 331 bbl., McClosky 2,879-85 ft. and 2,887-92 ft., T.D. 2,906 ft.

Wabash County

Snowden & McSweeney 1 Seibert SE SE NW 24-2n-13w
Flowed 600 bbl., McClosky 2,664-78 ft., T.D. 2,673 ft.

Marvel 1 Putnam ..... NW SW SE 3-1n-13w
Dry, Fredonia 2,701 ft., T.D. 2,768 ft.

National Pet. 1 Hinderliter ..... SE SE NW 3-1n-13w
Abandoned location.

Florida 1 Pixley ..... SE SE SE 7-1n-12w
Abandoned location.

Continental 2 C. E. Schultz .... NE NE NW 30-2s-13w
Pumped 25 bbl., Biehl sand 1,713 ft., 20-qt. shot 1,727-30 ft., T.D. 1,732 ft.

Washington County

Gass 1 Hasten ..... NW NE NE 13-1s-2w
Dry, Cypress 1,348 ft., Benoist 1,536 ft., T.D. 1,547 ft.

L. Horton 1-B H. Bielatowicz .... SW SE SW 23-3s-3w
Pumped 76 bbl. oil and 15 bbl. water, 20-qt. shot, Benoist 1,260 ft., T.D. 1,276 ft.

L. Horton 3 T. Kozuszek ..... SE SW SW 23-3s-3w
Pumped 70 bbl. oil and 15 bbl. water, 20-qt. shot, Benoist 1,259-71 ft.

Magnolia 7 J. Barczewski.....SE NE NE 15-3s-3w
Dry, Benoist 1,255 ft., T.D. 1,279 ft.

Wayne County

Wayne Drilling 3 Vaughn.....NE SE SW 26-2s-8e
Pumped 320 bbl., McClosky 3,358-62 ft., 3,376-87 ft., and 3,398-3,409 ft., T.D. 3,414 ft.
D. W. Humphries 1 Legg.....NW SE SW 4-2s-7e
Flowed 360 bbl., McClosky 3,269-77 ft., T.D. 3,295 ft.
Bell O. & G. 2 Flanders.....W½ SE NW 3-2s-7e
Pumped 112 bbl., Aux Vases 3,095 ft., pay 3,195-3,215 ft., T.D. 3,250 ft.
J. W. McNeil 1 Phillips.....NW SE SW 4-2s-7e
Abandoned location.
Pure 1 M. E. Wells.....E½ NE SE 29-2s-8e
Flowed 243 bbl., McClosky 3,025-30 ft., T.D. 3,093 ft.
Pure 2 F. Behymer C.....W½ SW SE 32-2n-8e
Flowed 1,060 bbl., 5,000 gal. acid, McClosky 3,025-28 ft., 3,032-36 ft., and 3,072-77 ft., T.D. 3,100 ft.
Pure 7 J. Hubble.....E½ SE SE 32-2n-8e
Flowed 640 bbl., 5,000 gal. acid, McClosky 3,017-20 ft. and 3,065-68 ft., T.D. 3,080 ft.
Pure 5 W. Hubble A.....E½ SW NE 32-2n-8e
Flowed 599 bbl., 5,000 gal. acid, McClosky 3,050-55 ft., T.D. 3,115 ft.
Pure 3 J. W. Hubble-A.....N½ NE NW 33-2n-8e
Pumped 200 bbl., 5,000 gal. acid, McClosky 3,022-26 ft., T.D. 3,097 ft.
Pure 1 Cobourn.....W½ NE NW 1-1n-7e
Flowed 358 bbl., 6,000 gal. acid, McClosky 3,018-20 ft., T.D. 3,063 ft.
Pure 2 C. Bates-A.....E½ SE NE 8-1n-8e
Flowed 345 bbl., 5,000 gal. acid, McClosky 3,054-65 ft. and 3,071-73 ft., T.D. 3,110 ft.
Pure 1 H. Bradley.....W½ NW SW 9-1n-8e
Pumped 15 bbl. oil and 11 bbl. water, 6,000 gal. acid, McClosky pay 3,040-43 ft. and 3,054-56 ft., Rosiclare pay 2,998-3,003 ft., T.D. 3,083 ft.

White County

Cook 2 Polland.....SE SW SW 28-3s-9e
Flowed 230 bbl., McClosky 3,403-11 ft. and 3,416-21 ft., T.D. 3,426 ft.
Cherry & Kidd 1 W. W. Gray.....NE SE SE 8-4s-14w
Pumped 72 bbl., sand 2,686-99 ft., T.D. 2,700 ft.
Pace & German 1 F. M. Hau.....SW NW SE 9-4s-14w
Pumped 93 bbl. oil and 2 bbl. water, 10-qt. shot, Bethel 2,708 ft., T.D. 2,722 ft.
Pure 2 Potter.....NW NW SW 9-4s-14w
Pumped 76 bbl., Bethel 2,684 ft., T.D. 2,698 ft.
Superior 1 Gwen.....SW NE SE 33-4s-14w
Pumped 100 bbl. 38.1° oil in 22 hr., 40-qt. shot, Cypress sand 2,569-93 ft., T.D. 2,597 ft.
Nation 1 Rose Dunn.....NE NW NW 6-4s-8e
Flowed 375 bbl., 120 and 40-qt. shots, McClosky 3,338-45 ft., T.D. 3,392 ft.
Sun 2 Adam Brown unit.....S½ NW SE 2-4s-9e
Dry, Menard 2,586 ft., Tar Springs 2,742 ft., Ste. Genevieve 3,380 ft., McClosky 3,471-78 ft., T.D. 3,515 ft.
Sun 1 V. W. Ford.....E½ W½ E½ 18-5s-14w
Pumped 90 bbl., 50-qt. shot, McClosky 2,994-3,002 ft., T.D. 3,003 ft.
Carter 7 O. Poole.....SE NE NE 25-6s-8e
Swabbed 131 bbl., Hardinsburg 2,500 ft., top sand 2,532 ft., 10-qt. shot 2,541-51 ft., T.D. 2,655 ft.
Smokey 1 W. O. Wilson.....SW NW SE 11-6s-9e
Pumped 60 bbl., Waltersburg 2,259-64 ft. (gas), and 2,264-73 ft. (oil), T.D. 2,273 ft.
Exchange-Ohio 3 Pierce.....NW NW SW 12-6s-9e
Flowed 135 bbl., Waltersburg 2,249 ft., 20-qt. shot 2,259 ft., T.D. 2,278 ft.
Skelly 9 Storms.....NE SW SW 14-6s-9e
Swabbed 105 bbl. oil and show water, 20-qt. shot, Waltersburg 2,241-49 ft., T.D. 2,253 ft.
Jarvis 1-A Anderson.....NE NE SW 34-6s-10e
Dry, Cypress 2,661-65 ft., Bethel 2,789 ft., Aux Vases 2,916-36 ft., Ste. Genevieve 2,943 ft., St. Louis 3,075 ft., T.D. 3,095 ft.
Sun 12 E. R. Greathouse.....SW NW SE 33-4s-14w
Flowed 250 bbl., 5,000 gal. acid, McClosky 2,888-92 ft., T.D. 2,892 ft.

ILLINOIS DRILLING REPORT

Bond County

J. Farrelly 1 Kyle.....SW NW NW 28-4n-4w
Old T.D. 1,327 ft., rigging up to deepen.

Clark County

H. R. Snavely 1 Schofield.....SE NE SE 6-11n-11w
Trenton 3,272 ft., drilling 3,803 ft.
Allen & Sherritt 2 Harper.....SW NW SW 5-11n-14w
Trenton 2,258 ft., small show oil at 2,358-63 ft., S.D. 2,401 ft.
Strickler 1 McFarland.....NW NE SW 19-10n-13w
T.D. 2,833 ft., P.B. 1,552½ ft., Devonian 1,530 ft., bailed water, S.D.
Snell & Goldsmith 1 Schaefer.....SW NE NW 33-2n-3w
Devonian 2,490 ft., T.D. 2,570 ft., P.B. to 2,530 ft., cleaning out.
L. S. Miller 1 Schmidt.....C E½ W½ SE 35-2n-5w
St. Louis 1,135 ft., T.D. 1,503 ft., small show oil and some water at 1,195 ft.

Clay County

Lagall 1 Huffman.....W½ SW NW 20-4n-6e
Glen Dean 2,275 ft., Cypress 2,457 ft., Paint Creek 2,555 ft., Benoist 2,635 ft., Aux Vases 2,701 ft.

Clinton County

B. E. Martin 1 Heinzman.....NW NE NW 16-2n-1w
First report.

Crawford County

Bell Bros. 1 George Kersey.....NE SE NE 1-5n-13w
Salem 1,775 ft., T.D. 2,805 ft., 5½-in. casing at 1,363 ft., to test.

Edgar County

Downey & Cain 1 Stark.....NW NW NE 18-12n-13w
Drilling 456 ft., 6-in. casing at 269 ft.

Edwards County

Superior 1 M. Works.....NW NW SW 18-2s-11e
McClosky 3,088-3,102 ft., 5,000 gal. acid, flowed 859 bbl. oil through ¾-in. choke, tops include Waltersburg 2,338 ft., Vienna 2,395 ft., Cypress 2,760 ft., Bethel 2,925 ft., and Ste. Genevieve 3,055 ft.

Effingham County

Turner 1 Pruett.....SE SW NW 7-5n-3e
Fishing at 1,360 ft.

Fayette County

Forest 1 B. D. Payne.....NW NE NW 27-4n-1w
10-in. casing 875 ft., Hardinsburg 1,091 ft., show oil 1,188-91 ft.
D. B. Lesh 1 Haynes.....NW SW 35-6n-2e
S.D. 1,567 ft.
L. Grandstaff 1 Severus.....NW SE NW 18-6n-3e
First report.

Ford County

Nelson et al 1 Erp.....SW NW SE 19-24n-7e
Drilling 1,880 ft.

Franklin County

Manley Oil 1 Downen.....SW SW SW 26-7s-4e
Ste. Genevieve 3,065 ft., Fredonia 3,093 ft., T.D. 3,116 ft., 5½-in. casing at 3,091 ft., reported 500 to 800 bbl.

Hamilton County

Texas 1 N. Adams.....N½ NE NW 8-4s-7e
Ste. Genevieve 3,342 ft., McClosky 3,343 ft., T.D. 3,457 ft., tested 1 bbl. oil and ½ bbl. water per hr., electric eye showed water from casing leak, acidized with 3,000 gal., swabbed 21 bbl. oil and 17 bbl. water.

Hancock County

Sam Tate et al 1 J. Rice.....SW NE NW 28-4n-5w
T.D. 744 ft., S.D. for casing.

Jasper County

Conner & Arnold 1 F. M. Swick.SE SE NE 17-6n-10e
Cypress sand 2,492-2,578 ft. with no show oil, Ste. Genevieve 2,742 ft., Fredonia 2,776 ft., McClosky 2,780-86 ft. showed saturation, T.D. 2,819 ft., 5½-in. casing at 2,777 ft.
Johnson 1 V. V. Hunt.....E½ SE NE 17-8n-10e
First report.

Jefferson County

Rodger C. Young 1 Whittington...SE SW NE 30-4s-3e
Benoist 2,635 ft., T.D. 3,480 ft., preparing to squeeze cement on P.B. to 2,661 ft. to test.

Jersey County

Hughew Pet. 1 Kellall.....SE SE NE 22-8n-12w
S.D. 577 ft.

Lawrence County

Robinson 1 Sauers.....NW SE NE 20-3n-12w
Drilling 2,151 ft. with cable tools on Trenton test.

Marion County

Kingwood 1 H. B. Spencer.....NW NW SW 19-3n-3e
Osage 3,076 ft., Devonian 3,838 ft.
Big Four 1 Sherman.....NE NW NW 9-2n-1e
Old T.D. 3,004 ft., cleaning out to deepen.
Shell 6-C A. Verren.....E½ SE NW 18-3n-1e
Drilling 1,100 ft.

Macoupin County

Steward 1 Carlinville National Bank.....
NE NE NE 35-9n-8w
Saturated lime at 600-12 ft., T.D. 1,320 ft.

McDonough County

W. Vette 1 McClure.....SE NE NE 4-5n-1e
Drilling 480 ft.

Montgomery County

Ed Solomon 1 Carroll.....NE SE NE 3-8n-5w
T.D. 675 ft., show oil 673-75 ft., 100 ft. oil and 500 ft. water, will try to run casing.
C. Ewing 1 Waggoner.....SW SE SW 29-11n-5w
Shot 25 qt. at 570 ft., pumping water and small show oil.
C. W. Miller 1 F. Alford.....NW NW NW 6-10n-5w
T.D. 687 ft., sand 568-78 ft., showed water.
Seaboard 1 O. Lay.....NW NW SE 20-8n-5w
First report.
Thorpe & Grant 2 B. Woods..SW NW NW 32-11n-5w
First report, drilling 102 ft.
Ray Brown 1 Witt.....SE SE SE 30-11n-5w
First report, drilling 110 ft.

Saline County

Potter et al 1 Thaxton.....E½ NW SW 28-8s-7e
Tar Springs 1,818 ft., Glen Dean 1,845 ft., Cypress sand 2,201 ft.
Parker & Son 1 fee.....NW SW SE 8-10s-5e
Drilling 3,405 ft.

Wabash County

Bob O'Meara 1 Gould.....NW NW SE 17-1s-12w
Glen Dean 1,785 ft., Cypress sand 2,022-26 ft., showed saturation, 2,034-41 ft. (saturated) 2,042-45 ft. small show oil, T.D. 2,053 ft., 5½-in. casing 2,012 ft.
Monarch 1 F. Hoadley.....NW NW 11-9n-1w
First report, drilling 70 ft.

Washington County

Cairo Union Mining 1 Chaney..NW NW SW 23-3s-4w
Drilling 650 ft.

White County

Mazada & Palmer 1 Lee Storms..N½ SW SE 25-5s-4e
Waltersburg 2,370-95 ft., Tar Springs 2,420 ft., Glen Dean 2,520 ft., Cypress 2,748 ft., Cypress sand 2,761-2,812 ft. with show oil, drilling 2,835 ft.
Carter 1 B. Questell.....SW NW SE 2-7s-9e
Saturation 1,756-71 ft., 7-in. casing at 1,761 ft., filled up 600 ft. oil in 6 hr.
Carter 1 Dagley.....NW NW NE 11-7s-9e
Shot 10 qt. at 1,504-07 ft., swabbed 78 bbl. oil per day, testing.
Arrow Drilling 1 J. C. Hau.....SE NE NE 5-4s-14w
First report.

Oklahoma Fields

(Continued from Page 89)

ft., T.D. 3,471 ft., set 7-in. casing 3,466 ft., P.B. to 3,380 ft., drilled out to 3,541 ft., perf. at 3,443-50 ft., pumped 30 bbl. oil and 30 bbl. water.

Stephens County

Velma area: Burkhart & Campbell 1-A Luster, SE SE SW SE 9-1s-5w, T.D. 1,580 ft., dry.
Wildcat: Brown 1 Dilley, C SE SE 6-3s-5w. First report, rig.

Tulsa County

Independent pool: L. B. Jackson 9 Doneghy, NW NW SW 13-16-12. T.D. 1,390 ft., pumped 5 bbl.
Bird Creek area: Harrop & Crouch 2-A Smith-Rumsey, C SW NE 23-21-12. T.D. 1,319 ft., pumped 5 bbl.
Bruner area: Tate & Hinerman 1 Cooper, NW SW NE 4-19-12. T.D. 1,275 ft., gaged 750,000 cu. ft. gas.

Wagoner County

Oneta area: B. G. Goble 2 McGee, SW SE SE SE 34-18-15. T.D. 1,105 ft., dry.

Woods County

Wildcat: Gulf Oil 1 Hess, C NE NW 33-23-13w. Building road.

Tide Water Associated Completes Alkylation Plant

(Continued from Page 32)

The stabilized alkylate-bottoms product is charged to a rerun tower where it is separated into three products. The overhead stream is controlled to 300° F. A.S.T.M. end-point specifications and is suitable for blending into high-quality superoctane aviation fuels. A side cut is withdrawn and stripped to provide an intermediate fraction of about 300° to 400° F. boiling range. A small amount of heavy alkylates produced in the process is withdrawn from the bottom of the alkylate rerun column after steam stripping. An excellent degree of fractionation is obtained in the return tower, which utilizes a small amount of 250-lb. refinery steam as a heating medium.

General characteristics of the products currently produced in the Avon alkylation plant are shown in Table 2.

TABLE 2—CHARACTERISTICS OF AVON ALKYLATE PRODUCTS

	Light alkylate	Intermediate alkylate	Bottoms
Octane No. (motor method)	92.5	83.0	80.0
Reid vapor pressure	3.8	...	...
Gravity, °A.P.I.	71.3	56.2	50.6
A.S.T.M. distillation, °F.:			
I.B.P.	135	314	396
5 per cent	172	322	404
10 per cent	184	327	408
20 per cent	199	332	412
30 per cent	209	335	420
40 per cent	217	339	429
50 per cent	222	342	442
60 per cent	225	346	460
70 per cent	230	350	484
80 per cent	238	354	516
90 per cent	250	360	560
95 per cent	270	363	610
End point	310	390	644
Recovery	98	98	98
Residue	1	1	1
Loss	1	1	1

Cooling water for the plant is furnished by a four-cell Schubert-Christie forced-draft tower. The forced-draft type of tower is particularly well adapted to the Avon operations because windage losses are eliminated which allowed the installation of the alkylation plant on a site close to the main refinery electric power lines. The cooling-water circulating system is so arranged that a major part of the water can be circulated through the refrigeration condensers before passing through other coolers where slightly warmer water can be utilized.

The area around the acid reactor system is paved with acid-resisting brick laid on acid-proof concrete. This section of the plant drains to acid-proof sewer lines. The rest of the battery area is completely paved with ordinary concrete. All vessels containing acid or caustic mixtures were stress-relieved and all piping handling acid or caustic were stress-relieved after fabrication.

All centrifugal pumps with the exception of the reactor pumps are electrically driven. A total of 15 steam-driven low-clearance reciprocating pumps are provided for handling light charge and reflux hydrocarbons. These steam pumps all operate on 150-lb. refinery steam.

The control room contains all important plant recorder controllers and indicating gages. A sufficient number of instruments has been provided to give a complete picture of plant operation at all times. The control house is built in two sections, one for the control board and a separate room for the electric-motor switches. The control room also contains sufficient equipment for simple plant-control tests, such as determination of acid and caustic concentration, percentage unsaturated hydrocarbons, as well as boil tests on reflux streams. The plant has been easily controlled by two men per shift.

The Avon alkylation plant was placed in operation with a minimum of difficulty, and has operated smoothly and efficiently since the initial operation.

Alberta Prospects Active as Tests Find Production

By VICTOR LAURISTON

AGGREGATE allowable for 104 gas wells, in Turner Valley, effective September 1, has been cut from 97,491,000 to 94,093,000 cu. ft. a day; with the further stipulation that no gas may be produced at any well which is not used for the generation of light, heat, or power for domestic or industrial purposes.

Tests in the Lime

West Central field: Southwest Petroleum 4, LSD 4, 8-18-2w5, finished at 7,225 ft., 438 ft. in the Madison limestone, is acidizing and testing, with early indications of a large producer.

Pacific Petroleums 5, LSD 6, 7-19-2w5, finished below 8,080 ft., more than 442 ft. in the Madison, and is preparing for test. Complete cores were taken of the lime, showing at least average porosity in both upper and lower zones.

Okalta Oil 9, LSD 13, 18-19-2w5, got the lime around 7,350 ft. and is standing cemented.

Southwest field: Pacific Petroleums 4, LSD 3, 32-18-2w5, is standing cemented in the top of the lime at 7,544 ft., waiting for equipment from No. 5.

Brazeau Structure

On the Brazeau structure in the northern foothills, Home Oil 1, LSD 16, 7-43-17w5, has perforated and acidized the middle zone, and is making separator tests. The lower zone after gun perforation and acidizing made 9,000,000 cu. ft. a day with about 24 bbl. of 55-gravity crude, the gas also showing substantial naphtha saturation. A third zone may be tested later.

Ram River Well

On the Ram River structure, Ram River Oils 2, 1-27-11w5, is cementing production string around 522 ft. The first 403 ft. of drilling was in broken rock with many cavities, necessitating carrying casing. Below this the hard Devonian lime showed soft measures with gas shows and cores had a strong petroleum odor. Government experts advised running and cementing pipe before deepening. Some 5,300 ft. of 2-in. water line will be laid and water pumped 75 ft. up to location. Test is 460 ft. below the Banff shales and also below the sulfur-water strata, with the formation almost horizontal.

Tests in the Foothills

On the Clearwater structure Clear Oils 1, LSD 8, 2-35-10w5, is spudding with diamond-drill equipment. O. D. Bush has the drilling contract. It is planned to carry 6⅝-in. hole into the Devonian limestone, where production is looked for between 1,700 and 3,500 ft. Location is 2 miles north and somewhat west of Altoba 1, which last year got good oil and gas shows in the Devonian.

On the Moose dome McColl-Frontenac 1 has tentative location about 3 miles upstream from Moose Oils 1 gasser, LSD 8, 29-22-6w5. Heavy-duty rotary will be used and production is expected in the Devonian lime around 2,600 ft. Test will spud about September 20. Alberta Drilling Co. is hauling equipment for Dome Oil & Gas 1, LSD 4, 16-22-6w5. The structure, on which McColl-Frontenac Oil Co. has secured about 10,000 acres, is regarded as semiproven, Moose 1 having encountered a heavy wet gas flow while Moose 2 has shipped small quantities of light crude.

In the Sheppard Creek area, south of Turner Valley, Alberta Pacific 1, LSD 6, 7-16-2w5, is resuming after casing to 5,357 ft.

In the Mill Creek area, just north of the Montana boundary, Alliance 1, LSD 14, 11-6-2w5, is below 6,722 ft. and showing an exceptional thickness of Fernie shale formation.

Steveville Field

In the Steveville field, east of Calgary, Standard of British Columbia will drill a second well close to Standard 1, Princess, LSD 13, 22-20-12w4. Tests of the Princess well were halted by a second gas blowout which wrecked the derrick. The flow came from an upper zone which also showed some oil.

It is estimated that if it were not for operating difficulties the well would make around 250 to 350 bbl. a day. One zone gave about 75 bbl. of clean crude, testing 33 to 35 gravity, but later acidization brought in water from another zone. Other horizons gave fair shows of crude, and substantial quantities of gas. Rig will be moved from Standard 1 Tide Lake to the new location.

Vermilion Field

In the Vermilion field, east-central Alberta, Vermilalta-Frankview 2, LSD 5, 20-50-5w4, drilled by Western Drilling Co., is coring oil sand below 1,800 ft. Casing will be cemented and truck equipment used for drilling out cement and running tubing, while portable rotary outfit will be moved to Western-Battleview 1, LSD 1, 30-50-5w4, where derrick has been completed. By this method it is expected to speed up the Western Drilling program of 10 wells. Vermilalta-Frankview 2 is a north offset to Franco-Battleview 2 producer which is pumping around 65 bbl. of 13 to 15-gravity crude per day, from the same lower Cretaceous sand. Vermilalta-Frankview 1, LSD 16, 28-50-5w4, failed to get the same horizon but is deepening below 2,300 ft. Graham-King 1, LSD 1, 23-49-6w4, and Cord-Graham 1, LSD 13, 21-50-5w4, have derricks up. Franco-Battleview 3, LSD 13, 20-48-5w4, 12 miles south of No. 2 producer, finished at 1,870 ft., has been gravel packed, but is making about 85 per cent water and 15 per cent crude.

Lloydminster Field

In the Alberta end of the Lloydminster field, Lloyd-Gates 1, LSD 9, 26-49-1w4, is shut down at 1,106 ft. waiting for 6-in. casing. P. S. Ryan has located Slade 1 in SW 29-49-1w4, about 4½ miles west and 1½ miles south of Lloydminster. Contract is being arranged with Alberta Drilling Co. for a 2,000-ft. standard test. Shaw Petroleums 2, LSD 10, 25-49-1w4, is delayed in testing and finishing by a fishing job. Lloydminster Royalties 1, LSD 4, 26-49-1w4, has suspended production operations owing to inability to plug off water.

(Continued on Page 100)

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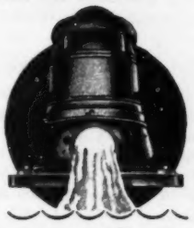

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By GEORGE WEBER

JACKSON, Miss., Sept. 9.—The Tuscaloosa oil discovery well at Tinsley, Yazoo County, Mississippi, was completed last week, bringing the fourth formation of the Upper Cretaceous into production in the state and attracting considerable interest among operators. Tinsley production increased for the third consecutive week to approximately three times the daily average of a month ago.

Elsewhere in the state, the deepest wildcat ever drilled in Mississippi was abandoned, two other wildcats were abandoned and a Pickens outpost test was converted into a salt-water disposal well. Leasing activity continues steady, and geophysical shooting is centered in southern Mississippi and Alabama, with about 50 crews in Mississippi and 10 in Alabama.

Tinsley Strike

Union Producing Co. brought in 1 Powell, Tuscaloosa sand discovery well, for an initial flowing gage of 632 bbl. in 26 hours on a drill-stem test using ¾-in. chokes. Pressure at top of the hole was 220 lb. The test, bottomed at 6,227 ft., was plugged back and 7-in. casing was set at 6,122 ft. Operators first perforated at 6,118-22 ft. and squeezed off the water sand with 380 sacks of cement. After drilling out to 6,117 ft., the section at 6,110-15 ft. was perforated and swabbing failed to show fluid rise. It was believed that the squeeze job prevented production show, and the same section was reperforated. The well then flowed the above initial gage. The crude is of 42° A.P.I. gravity, and a shakeout test showed no water and 0.3 per cent mud.

Three other Tinsley wells were completed, one, Magnolia 2 Milner, extending production one location east on the north end with an initial of 384 bbl., through open tubing from the Woodruff sand at 4,960-5,010 ft. The other two completions were Woodruff sand wells.

In Scott County Gulf 1 Newell Minerals Lease Co., formerly drilled by E. L. Martin, was abandoned after reaching the greatest depth drilled in Mississippi—10,223 ft. The well ran high but drilled through the entire Cretaceous section without encountering any shows. In the Upper Cretaceous the following tops were picked from a Schlumberger Survey; Selma chalk 3,800 ft., Eutaw, 4,880 ft., Tuscaloosa 5,278 ft., Lower Cretaceous, 6,470 ft .

Hinds County's only current active wildcat, Robinson & Fraim 1 Alford, was abandoned at 3,770 ft. and in Yazoo County, the Rowan, Hope and Thompson 1 Cook, located ¾ mile southwest of Pickens failed to find commercial oil in the Eutaw formation and was abandoned at 5,057 ft. The test had a show of oil in sand at 4,854-62 ft., but a drill-stem test had a show of oil in sand at 4,854-62 ft., but a drill-stem test at that section failed to show any production.

Another Pickens field failure was Exchange & Kingwood 6 Wilburn, a southwest edge test although showing some oil in a sand above the Wilburn sand, producing in the field, failed to encounter commercial production in that sand and found salt water in the Wilburn. Operators will use the test for disposal of salt water produced in the Pickens wells.

New Tests

Plans for new wildcats include a tentative location by Gulf Refining Co. on the S. J. Peeler land in NW SE 35-15n-9e, Attala County. A Carroll County test is planned by J. P. Evans, and in Warren County, Magnolia Petroleum Co. has staked tentative location for a 9,000-ft. test in 13-14n-4e on a large block held by Magnolia and Exchange Oil Co. The Davis Island area of Warren County, on the Mississippi River, is also due for an early wildcat test.

MISSISSIPPI COMPLETIONS

Wildcat—Hinds County

Harvey Robinson and J. P. Fraim 1 Alford, SW SE 18-6n-1e, dry, Midway 2,720 ft., chalk 2,784 ft., T.D. 3,770 ft.

Wildcat—Scott County

Gulf 1 Newell Minerals Lease Co., N½ NE NE 5-6n-7e, dry 10,223 ft.

Wildcat—Yazoo County

Rowan, Hope & Thompson 1 Cook, 440 ft. S, 330 ft. E, NW cor. 6-11n-3e, dry, show oil and odor at 4,854-60 ft., D.S. test failed.

Pickens—Yazoo County

Exchange & Kingwood 6 Wilburn, 1,320 ft. S, 440 ft. W, NE cor. 31-12n-3e, dry, will use as salt-water injection well, Selma 3,893 ft., Eutaw 4,816 ft., Wilburn 4,876 ft., Tuscaloosa 5,388 ft., T.D. 5,806 ft.

Tinsley—Yazoo County

E. C. Johnston 5-B Brumfield, NW SE 2-10-3, pumping 700 bbl., T.D. 4,796 ft., Woodruff sand 4,762-90 ft., 5½-in. casing 4,654 ft.

Jones & O'Brien Bros. 3-C Stevens, SE NE 11-10-3, pumping 400 bbl., Woodruff sand 4,690-4,734 ft., T.D. 4,745 ft.

Magnolia 2 J. J. Milner, SW SW 6-10-2, 384 bbl., open tubing, Woodruff sand 4,960-5,010 ft., T.D. 5,399 ft., 7-in. casing 5,377 ft.

Union 1 Powell, SE SW 36-11-3, 632 bbl., 26 hr., ¾-in. chokes, Powell sand (Tuscaloosa formation) 6,110-55 ft., oil in top, salt water in base, old T.D. 6,227 ft., P.B. 6,117 ft., perf. 6,110-15 ft.

MISSISSIPPI DRILLING REPORT

Attala County

Jones & Crosby 1 J. F. Allen, SW SW 33-13n-5e, spudded, S.D.

Hawkins, Howell & Mathews 1 Weeks, 330 ft. E, 410 ft. S, NW cor. NW SW 29-15-6e, drilling 3,493 ft.

Grenada County

H. H. Womble and D. H. Williams 1 Conn. General Life Ins. Co., 200 ft. S, 150 ft. W, NE cor. NW SE 28-23n-5e, elev. 201 ft., drilling 593 ft.

Jefferson Davis County

Exchange 1 J. J. Newman Lbr. Co., SE NE 36-7n-19w, S.D. 5,025 ft., shale, elev. 450 ft., top Vicksburg 1,405 ft., Moody Branch 1,910 ft., Cockfield 2,270 ft., Wilcox 3,550 ft.

Jones County

T. N. Smith 1 Hollifield, NW SW NW 20-8n-12w, 1,800-ft., drill stem stuck, washing over.

R. W. Williams et al 1 Eastman-Gardner, NE SW 7-8n-12w, fishing 6,817 ft., top Selma 5,226 ft.

Montgomery County

Gulf 1 Fred Parker, SE SW 22-19n-7e, fishing for 1,650-ft. stuck drill stem, T.D. 5,303 ft., black shale, top Tuscaloosa 1,575 ft., Lower Cretaceous 2,650 ft., Pottsville 4,495 ft., elev. 394 ft.

E. R. Henderson 1 Columbian Mutual Life Ins. Co., 36-21n-5e, drilling 3,467 ft., elev. 268 ft., Selma 1,570 ft.

Tallahatchie County

I. P. Lerew et al 1 L. Westbrook, SE SE 18-23n-2w, drilling 4,223 ft., Wilcox 726 ft.

Yazoo County

Joe Dawson 1 McGraw Curran Lbr. Co., NW NW 19-11n-3w, drilling 4,862 ft.

Edward DeLoach 1 Wilburn, 6-12n-3w, spudded.

Exchange 1 A. E. Edgar, SW NW NW 28-13n-1w, drilling 59 ft.

Petroleum Exploration Co. 1 L. E. Vandevere, 440 ft. S line, 330 ft. W line, SW SE 25-13n-1w, running electrical survey, T.D. 6,260 ft., Midway 3,835 ft., Selma 4,645 ft.

Pickens—Yazoo County

Exchange et al 5 Wilburn, 440 ft. S, 220 ft. E, NW cor. 31-12n-3e, moving in heavy derrick to deepen, drilling 5,700 ft., Tuscaloosa 5,365 ft.

Tinsley—Yazoo County

Hassie Hunt 1 Shannon, NW NW NW 14-10-3, rigging up.

E. C. Johnston 6-B Brumfield, SE NW 2-10-3, S.D. 5,130 ft., waiting on rig repairs.

Magnolia 3 J. J. Milner, NW SW 6-10-2, drilling shale 4,629 ft.

Magnolia 4 J. J. Milner, SW NW 6-10-2, drilling shale 436 ft.

Slick-Urschel 8 Slick estate, NW SE 35-10-3, swabbing Woodruff sand 4,804-28 ft.

Union, 1 J. G. Harris, NW NW NW 19-10-2, drilling 4,873 ft.

Union 3 Partridge, 526 ft. S, 2,012 ft. W, SE cor. 1-10-3, set 10¾-in. casing 619 ft., S.D. 700 ft.

Union 1 Robinette, 2,053 ft. E, 642 ft. S, NW cor. 19-10-2, Woodruff sand 4,770-4,864 ft., set 7-in. casing 4,900 ft., T.D. 4,902 ft.

Union 12 Stevens, C SW NW 12-10-3, moving in material.

Union 6 Twiner, NW NW NE 1-10-3, coring 5,567 ft.

Alabama Activity

Another Fayette County test for Alabama may begin shortly, with tentative location staked on the J. W. Mills block in SE SE NE 10-15s-12w by W. H. Henniger. The test is due to spud by November 1. Madison County, Alabama, has two new operations with tests beginning in 35-5s-2e and 30-1s-2e. In Morgan County a third new wildcat is spudded in 2-6s-1w. The deep Mobile County test at Bayou La Batre, formerly W. L. McClanahan 1 Lockhart, has been taken over by George Lilly and A. R. Temple. Total depth is 6,707 ft. and operations are expected to resume shortly.

ALABAMA FIRST REPORTS

Wildcat—Madison County

W. W. Newman et al 1 Dunk Hill, 35-5s-2e, reaming to set casing 255 ft.

J. L. Caldwell et al 1 J. McCord, NW SE SE 30-1s-2e, drilling 73 ft.

Wildcat—Morgan County

F. W. Rohwer 1 Karl Hough, 1,079 ft. S, 1,115 ft. W, NE NE 2-6s-1w, drilling 54 ft.

ALABAMA WILDCATS

Colbert County

Frederic Mellen & Gear 1 Mrs. W. B. Alsobrook, S½ SW cor. NW 10-4s-15w, drilling 1,659 ft.

Fayette County

B. L. Fillingame 1 Alabama Educational Association, NW SW 3-16s-12w, drilling 907 ft.

Franklin County

E. O. Heath, Jr. 1 W. O. Hester, SW SW 4-6s-12w, drilling 53 ft.

Marion County

Seaboard 1 Clarke et al, E½ SE SW 28-11s-14w, fishing 2,175 ft.

Mobile County

George E. Lilly and A. R. Temple (formerly W. L. McClanahan) 1 Lockhart, 300 ft. N, 150 ft. W, SE cor. NW SW 24-7s-3w, T.D. 6,707 ft., preparing to reset surface casing.

Walker County

Champlin 1 Galloway Coal Co., 12-13s-10w, fishing 2,245 ft.

Florida

Florida's only active wildcat, William G. Blanchard 1 Everglades, in 31-53s-35e, is reported to have had a show of gas at 1,200 ft., and operators are drilling ahead at 1,300 ft.

FLORIDA COMPLETIONS

Baker County

Swift Creek Oil Co. 1 Howell Turpentine Co., C 15-4s-19e, location abandoned.

Levy County

Florida Oil Discovery Co. 2 Cedar Key, SW SW NE 9-15s-13e, dry, T.D. 5,265 ft.

Harkey & Houck 1 Crapps, 15-14s-17e, dry, T.D. 1,100 ft.

Suwannee County

William G. Blanchard et al 1 Lucy Cotton, 774 ft. N, 153 ft. W, SE cor. NE 35-3s-11e, dry, T.D. 202 ft.

J. W. Phillips Oil Exploration 1 Shilkett, NW NW 14-4s-14e, dry, T.D. 369 ft.

FLORIDA WILDCATS

Dade County

William G. Blanchard et al 1 Everglades, 200 ft. E, 100 ft. N, SW cor. 31-53s-35e, show gas 1,200 ft., drilling 1,302 ft.

GEORGIA COMPLETIONS

Clinch County

Georgia Resources, Inc. 1 Dickerson, Land Lot 273, Land District 12, dry, T.D. 435 ft.

Montgomery County

E. O. Meadows 3 Moses, Uvalde, dry, T.D. 1,906 ft.

GEORGIA WILDCATS

Clinch County

Georgia Resources, Inc. 1 Gillican, C Land Lot 200, 12th Land District, S.D. 1,507 ft.

Canadian Fields

(Continued from Page 99)

Seismic survey of the Lloydminster, Vermilion, and Unity-Vera areas by the Helland Research Corp., sponsored by Franco Oils, has been completed and has indicated a number of satisfactory structures where drilling for gas reserves for the new Saskatoon project will be undertaken.

British Columbia Test

In the Peace River block, northern British Columbia, Provincial Government 1, Commotion Creek, is below 4,000 ft., with production expected around 6,000 ft.

LEGAL

Department of the Interior, United States Land Office, Cheyenne, Wyoming. Notice is hereby given that a lease of the oil and gas deposits in lot 3 Sec. 25, T. 56 N., R. 97 W., 6th P.M., 51.46 acres, in the Byron oil and gas field, Wyoming, is offered to the responsible qualified bidder of the highest bonus per acre, pursuant to the provisions of section 17 of the act of February 25, 1920 (41 Stat. 437), as amended, at the royalty rate scale in the lease form shown in Circular 1386, at the sale to be held in the office of the Register of the district land office at Cheyenne, Wyoming, at 10.00 o'clock A.M., on September 25, 1940. The successful bidder will be required to deposit on the day of the sale a certified check on a solvent bank, or cash, for one-fifth of the bid, and file a showing of qualifications to receive the lease, required by section 7 of General Land Office Circular 1386. The remaining four-fifths of the amount bid, together with the annual rental in advance, at the rate of $1.00 per acre, must be paid and a $5000 corporate surety bond must be furnished prior to the issuance of the lease. The bidders are warned against violation of the provisions of section 59 of the United States Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. Register.

LEGAL

Department of the Interior, United States Land Office, Las Cruces, New Mexico. Notice is hereby given that a lease of the oil and gas deposits in the following described lands is offered to the responsible qualified bidder of the highest bonus per acre, pursuant to the provisions of section 17 of the act of February 25, 1920 (41 Stat. 437), as amended, at the royalty rate scale in the lease form shown in General Land Office Circular 1386, at a sale to be held in the office of the Register of the District Land Office at Las Cruces, New Mexico, at 10 a.m. on October 14, 1940: E½ SE¼ Sec. 15, T. 17 S., R. 32 E., N.M. P.M., New Mexico, containing 80 acres, in the Baish oil and gas field. The successful bidder must deposit on the date of the sale a certified check on a solvent bank, or cash, for one-fifth of the amount of each bid, and file a showing of qualifications to receive the lease, required by section 7 of Circular 1386. The remaining four-fifths, together with the annual rental in advance at the rate of $1 per acre, must be paid and a $5,000 corporate surety bond must be furnished prior to the issuance of the lease. The bidders are warned against violation of the provisions of section 59 of the United States Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. Register.

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1940 High	1940 Low	Week ended Sept. 7 High	Week ended Sept. 7 Low	Week ended Sept. 7 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1939	Com. sh. earn. 1939	Com. sh. earn. 1938	1939 High	1939 Low	1938 High	1938 Low
58½	38½	48¾	46¼	48¾	Amerada Corp.	788,675	N.P.	50cQ	7-31-40	$2.00	$1.56	$2.07	74½	50	78	55
27⅛	18¼	22¾	22	22⅝	Atlantic Refining	2,663,999	$25	25cQ	9-16-40	1.00	1.66	1.40	24¾	18⅛	27⅜	17⅝
16⅝	8½	11¼	10¼	11	Barber Asphalt Co.	390,223	$10	25c	5-21-40	.25	1.39	—.85	21	10¼	23¾	12⅛
13⅜	7⅛	8⅝	7⅞	8⅜	Barnsdall Oil Co.	2,558,779	$5	15c	9-9-40	.90	.76	1.26	19½	11⅛	21⅝	10⅛
8⅛	5½	6⅝	6	6½	Consolidated Oil Corp.	13,751,726	N.P.	20cQ	8-15-40	.80	.55	.55	9⅞	6½	10⅜	7
25	16⅛	19¼	18⅛	19	Continental Oil of Delaware	4,682,572	$5	25cQ	9-30-40	1.00	1.35	1.10	31½	19⅞	35¾	21¼
6⅞	3⅜	4¼	3⅞	3⅞	Houston Oil	1,098,618	$25	...	10-17-30	...	.43	.83	9⅜	4½	9¾	5
14⅜	9	10½	10	10½	Lion Oil Refining	435,815	N.P.	25cQ	10-10-40	1.00	1.50	2.09	18⅛	10	25¼	15⅝
17⅝	11½	14¼	12⅝	13⅞	Mid-Continent Petroleum	1,857,912	$10	40c	6-1-40	.60	1.42	.56	18	11⅛	22⅝	12¼
11	7⅛	8¾	8¼	8¾	Mission Corporation	1,378,645	$10	40c	12-15-39	.65	.87	1.04	14⅞	8¾	17¾	10⅝
9¾	4⅝	6⅝	5¾	6¼	National Supply	1,155,517	$10	....	12-22-37	....	—.87	—.79	15½	5⅝	23	12⅛
8⅜	5⅜	6⅝	6⅛	6⅜	Ohio Oil Co.	6,563,377	N.P.	20c	6-15-40	....	—.10	.25	10½	6	14⅞	8⅞
8¼	5⅝	6½	6	6½	Pacific Western Oil	1,000,000	N.P.	40c	12-19-39	.40	.81	1.22	11⅞	7	15⅞	10¼
10	6¾	..	..	..	Pan American Pet. Trans.	4,702,945	$5	....	12-31-37	....	1.10	.08	8¾	5	9¼	6¼
41⅜	27⅛	36¾	33¾	36½	Phillips Petroleum	4,449,052	N.P.	50cQ	8-31-40	2.00	2.21	2.03	46½	31¼	44⅝	27¼
22¾	15	17	16½	17	Plymouth Oil Co.	1,038,633	$5	35cQ	9-30-40	§1.40	2.38	2.59	24	17¼	25⅜	15
11½	7	7⅞	7⅜	7¾	Pure Oil Co.	3,982,031	N.P.	25c	12-20-39	.25	1.11	.38	11⅜	6⅛	13½	8¼
8⅜	5⅞	8⅛	7⅞	8⅛	Richfield Oil Corp.	4,010,000	N.P.	50c	12-18-39	.50	.65	.51	10¼	6⅝	9⅞	5
20	11	14¼	13½	14¼	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	9-14-40	1.00	1.40	1.52	24⅜	15½	27½	15½
13⅛	7⅝	9⅜	8¾	9	Shell Union Oil	13,070,625	N.P.	25c	7-16-40	.50	.77	.72	17¼	9⅞	18⅝	10
23¼	12¼	17½	16	17	Skelly Oil	995,349	$15	25c	8-28-40	.75	1.99	2.27	29½	15½	34⅜	18½
12½	7⅛	9⅜	8¾	9⅛	Socony-Vacuum	31,206,071	$15	25cSA	9-16-40	.50	1.10	1.29	15⅛	10¼	16⅝	10⅜
26⅛	17⅜	18⅜	18	18¾	Standard Oil of California	13,003,953	N.P.	25cQ	9-16-40	1.10	1.38	2.22	33⅝	24¼	34⅞	25⅛
29	20¾	25⅜	25	25	Standard Oil (Indiana)	15,272,020	$25	†50c	9-16-40	1.25	2.23	1.82	30	22¾	35½	24¾
46½	29⅞	37	34¼	35¾	Standard Oil of New Jersey	27,280,998	$25	1.00†	6-15-40	1.25	3.26	2.86	53½	38	58⅝	39¾
65⅞	46¾	49½	48⅛	49	Sun Oil	2,434,863	N.P.	25c*	6-15-40	1.00	2.74	1.07	66	45¾	65⅛	45
2½	1¼	1⅝	1⅝	1⅝	Superior Oil Corp.	1,388,979	$1	10c	12-28-38	....	.04	.24	3⅝	1⅜	4¼	1⅝
47⅝	33	37⅜	35½	37	Texas Corp.	10,876,139	$25	50cQ	10-1-40	2.00	3.02	2.13	50¾	32½	49⅝	32⅝
4¼	2½	3⅛	3	3	Texas Gulf Producing Co.	888,146	N.P.	10c	6-15-40	.20	.69	.86	5¾	3¼	5⅞	2⅝
8⅝	5½	6⅛	5⅞	6	Texas Pacific Coal & Oil	888,236	$10	10c	9-3-40	.40	1.00	1.16	11⅜	7	12½	7
12	8¾	10	9⅝	9¾	Tide Water Associated	6,371,827	$10	15c	9-3-40	.80	1.05	1.28	14¼	9½	15¾	10⅛
17½	12	13	12⅝	13	Union Oil Co. of California	4,666,270	$25	25c	8-10-40	1.05	1.25	1.47	19⅜	15⅛	22½	17⅛
29⅞	22¾	26½	26¼	26½	Union Tank Car Co.	1,177,381	N.P.	45c	9-3-40	1.30	2.07	1.16	24¼	20⅛	23½	20
3⅝	1⅞	2	1⅞	2	Wilcox Oil & Gas	470,768	$5	10c	2-15-40	...	.77	.52	4¼	2⅜	3½	1⅝

*Also 5 per cent in stock. †Includes extras. ‡Also 2 per cent in stock. §Also 4 per cent in stock. ‖Also 2½ per cent in stock. ¶Also 1½ per cent in stock. —Deficit.

New York Curb Exchange

1940 High	1940 Low	Week ended Sept. 7 High	Week ended Sept. 7 Low	Week ended Sept. 7 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1939	Com. sh. earn. 1939	Com. sh. earn. 1938	1939 High	1939 Low	1938 High	1938 Low
10¾	4½	5½	5⅛	5¼	American Republics Corp.	1,308,049	$10	10c	7-11-38	....	$0.14	—.22	11¾	5½	11¾	5
3¼	1⅜	1⅝	1½	1⅝	Bridgeport Machine Co.	263,700	N.P.	$1.25	12-30-37	....	—.95	—.14	7¼	2½	10¼	4⅞
43	28	36¾	36¼	36¼	Buckeye Pipe Line Co.	200,000	$50	$1	9-14-40	$2.50	3.13	2.36	34¾	26½	39	22½
117	95	100	100	100	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	9-23-40	6.00	7.87	5.32	130	108⅝	128	97
6¾	4	6⅜	6⅛	6¼	Cities Service (new)	3,703,978	$10	....	6-1-32	....	.68	.23	9¼	4¼	11	5⅛
2⅛	1	1¼	1⅛	1⅛	Cosden Petroleum	465,332	$1	....	.....	.....	....	....	2¼	½	2⅜	⅞
24¼	11⅝	14½	13¼	14⅛	Creole Petroleum	6,974,356	$5	50cSA†	6-15-40	1.00	1.38	1.64	28	16¾	27½	17½
4⅜	2⅞	3⅝	3½	3⅝	Darby Petroleum	351,390	$5	25cSA	1-15-39	.25	.03	.69	7⅛	3⅝	10¼	5½
2	1¼	..	..	..	Derby Oil & Refining	263,162	N.P.	....	.....	....	—.37	—.91	2⅝	1½	3½	1½
31	23	..	..	..	Eureka Pipe Line	50,000	$50	50c	8-1-40	2.00	.63	—.37	23	15⅛	31	16
39⅞	25⅛	31	28½	30	Gulf Oil Corp.	9,076,202	$25	25cQ	10-1-40	2.00	1.69	1.43	45⅛	29¼	46⅞	33
68	47⅛	54	51	53½	Humble Oil & Refining	8,987,840	N.P.	62½c	10-1-40	2.00	3.33	3.98	71	52½	72⅝	56
12⅜	5½	8⅝	7½	8½	Imperial Oil of Canada	26,365,078	N.P.	37½c†	6-1-40	1.00	.71	.96	17	11⅜	19½	14⅛
4⅛	3½	3¼	3¼	3¼	Indiana Pipe Line	300,000	$7.50	10c	5-15-40	.50	.33	.47	7¼	5½	9⅜	6
19¾	18¼	12½	10¾	12⅜	International Petroleum	14,324,088	N.P.	75c	6-1-40	1.75	1.19	1.98	27½	17	31¼	21
2¾	1⅝	..	..	..	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	...	.06	.14	3¾	2⅛	5	2⅛
10¾	7⅝	9⅜	9	9⅜	Lone Star Gas	5,518,347	N.P.	20c	7-22-40	.70	.98	.88	10½	7⅛	10⅜	6⅝
6¼	3¾	4⅝	4½	4½	Louisiana Land & Exp.	2,966,762	$1	10c	9-14-40	.35	.22	.45	7¾	4	9⅜	6½
17	10	10¾	10	10¾	Margay Oil Corp.	149,943	N.P.	25cQ	7-10-40	1.00	1.52	2.28	17	14½	24	16
8½	6½	7⅛	7⅛	7⅛	Midwest Oil Co.	998,474	$10	45c	6-15-40	.90	.99	.93	8¾	6⅝	9¾	6⅝
6¼	4⅞	5¼	5⅛	5¼	Mountain Producers	1,593,584	$10	30cSA	6-15-40	.60	.70	.62	6	4⅞	5¾	4½
13½	10	11¼	10½	11	National Fuel Gas	3,810,183	N.P.	25cQ	7-15-40	1.00	.95	.84	14	11¼	14⅝	11½
12½	8¾	9⅝	9⅜	9½	National Transit	509,000	$12.50	50c	6-15-40	.85	.91	.88	9½	7¼	9¼	6½
1¼	¾	..	..	..	New Mexico and Arizona	1,000,000	$1	1c	12-1-37	..	.02	.02	1⅜	1	2⅝	1½
7¾	5¼	..	..	..	New York Transit	100,000	$5	25c	9-20-40	.40	.88	.16	6	4	4½	3½
9⅞	6	6⅞	6¾	6⅞	Northern Pipe Line	120,000	$10	40c	6-1-40	.30	.31	.24	7	4½	6	4
5½	2½	3⅜	3	3⅜	Pantepec Oil	2,856,872	$1	....	.....	....	....	....	7⅝	4	7¾	3½
3¼	1¼	2⅜	1⅜	2¼	Root Petroleum Co.	336,045	$1	25c	2-1-37	....	.70	.17	5	1¼	4½	1⅝
2½	1½	2¼	2⅛	2¼	Ryan Consolidated	298,931	N.P.	....	.....	....	.16	.29	3	1⅞	4	2⅛
11¾	4⅞	6⅛	6	6⅛	Southern Pipe Line	100,000	$10	25c	9-3-40	.30	.25	—.27	4⅞	3½	5⅜	3¼
44	28	34	32½	34	South Penn Oil	1,000,000	$25	37½c	9-27-40	3.00	2.84	1.44	40½	26¾	39	28¾
35	21	21	21	21	Southwest Penna. Pipe Lines	35,000	$50	50c	9-16-40	2.00	2.06	—.41	23	18	22¼	16½
20⅞	16½	18⅞	18¾	18¾	Standard Oil of Kentucky	2,604,790	$10	25c	9-14-40	1.30	1.53	1.45	20⅛	17¼	18¾	15
41¾	26¼	32	31	31¾	Standard Oil of Ohio	753,740	$25	25c	9-14-40	1.50	6.64	1.81	32¾	17	22¾	16¼
2	1⅜	1½	1⅜	1½	Sunray Oil	1,975,876	$1	5c	5-1-40	.10	.25	.23	2⅜	1⅜	3¼	2
2¾	2	3	3	3	Texon Oil & Land	936,024	$2	10c	9-30-40	.10	.49	.56	4	2⅝	5¼	3½
3⅜	2	2¼	2¼	2¼	Transwestern Oil Co.	750,000	$10	....	.....	...	—1.42	.12	6	2½	5¼	2⅝
2⅛	1/16	1⅜	1¼	1⅜	United Gas Corp.	7,818,959	$1	....	.....	....	—.55	—.51	3⅜	1½	5¼	2⅝

†Includes extras. —Deficit.

Personal Paragraphs

M. E. LOMBARDI has been retired as vice president of Standard Oil Co. of California, effective September 1, thus closing an active career of more than 35 years in the oil industry. F. S. BRYANT was elected a director, effective September 3, filling the vacancy caused by the retirement of Mr. Lombardi. Mr. Bryant will also hold the position as general manager of producing. A new 7,000-ton Standard Oil tanker, now under construction in the East, will be named the S.S. M. E. Lombardi, when christened late this month, in honor of of Mr. Lombardi. W. G. BLACK, who was general manager of the producing department, has retired after a service of more than 30 years with the company.

A. E. BRAINARD, geologist of Denver, Colo., will be the leader of a 2-day geological trip into southeastern Colorado sponsored by the Panhandle Geological Society, September 21 and 22.

HENRY J. PIERCE, president, Anglo-Portuguese Oil Co., arrived in this country from Lisbon last week for a short vacation. Mr. Pierce flew over in the Pan American plane, Dixie Clipper.

J. N. LYNCH of the production department for Shell Oil Co., Inc., formerly located in the Nome district, Gulf Coast Texas, has been transferred to the Sheridan area in Colorado County as district chief clerk.

THOMAS A. O'DONNELL, pioneer California oil man and first president and organizer of the American Petroleum Institute, will discuss the early days of the A.P.I. at the Los Angeles Basin chapter monthly meeting to be held in Long Beach, Calif.

R. P. McLAUGHLIN, who has been doing petroleum engineering work for Dominguez Oil Fields Co and who was general manager for several years, has opened an office of his own in Los Angeles, Calif., to engage in independent consulting work and geological and petroleum engineering. He was for several years state oil and gas supervisor.

HAROLD MOONEY, formerly in charge of asphalt sales of the Lyman Construction Co., Tulsa, is now in the new butane department of Warren Petroleum Co. HOWARD E. FELT, secretary of the Warren company, has been appointed vice president in charge of butane sales.

GILBERT LARSON, Oakland, Calif., operator, is spending several weeks in eastern Kansas, supervising operations at a well he is drilling near Piqua, Woodson County, Kansas. He recently bought the oil property of the Lucky Strike Oil Co. in that area.

GEORGE S. CAVANAUGH has been elected vice president and director of the Pennzoil Co. of California. Prior to this promotion Mr. Cavanaugh was chief chemist in charge of the company's lubricants plant. His experience in the oil industry dates back 25 years, when he started work at the Pennzoil refinery at Oil City, Pa. He worked for a while, following graduation from Penn State College, with the Bureau of Mines, Petroleum Division, but in 1921 went back to Pennzoil as chemist in the company's Los Angeles plant. His father was also a Pennzoil executive, with the Pennzoil Co. of Pennsylvania.

J. R. COLEMAN, for several years a production engineer for Gulf Oil Corp., Gypsy Division, has recently assumed duties as instructor in petroleum engineering at the Missouri School of Mines and Metallurgy, Rolla, Mo. Mr. Coleman is a graduate of the University of Texas, and for the past year has been connected with that institution as graduate assistant in the department of petroleum engineering.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Twenty-five thousand employes of the Standard of New Jersey are to work under the 8-hour-day schedule, beginning September 15. The men are highly pleased. Competing firms are finding fault because of the innovation.

A movement has been started at Oil City, Pa., for the erection of a suitable home for indigent oil men. A committee composed of Col. E. V. Selden, Oil City; A. W. Smiley, Foxburg, Pa.; Milton Stewart, Titusville, and E. M. Jennings, Pittsburgh, was appointed by Pres. Bill Hoffman of the Drake Memorial Association to see what could be done about it. F. O. Swedborg, Titusville, has offered 20 acres of land for the purpose.

20 YEARS AGO

Private gathering lines on leases are not to be taxed as common carriers, but they would have been had not the oil men made a timely protest at Washington. It seems to be perpetually necessary for oil men to fight for a square deal against certain officious officials.

Founders of the New York Petroleum Exchange, which is being organized for the purpose of stabilizing the oil business, hope to begin their work by the first of the year, William E. Walsh, an exchange official, told Texas oil executives who were urged to join the organization.

10 YEARS AGO

A wildcat in Rusk County, East Texas, attracted considerable attention when it was reported to have had a good showing of oil in Woodbine sand. It is C. M. Joiner's No. 3 Bradford, on the Juan Ximenes Survey.

Constitutionality of the state law authorizing the Corporation Commission to order curtailment of crude-oil production was attacked by C. C. Julian and associates in a hearing before the Oklahoma Supreme Court. An order restraining interference with Julian company production at Oklahoma City is sought.

J. E. SIMCO, West Texas oil producer, has been elected for his second term as sheriff of Upton County in West Texas.

JOHN T. REEVES, United Gas Pipe Line Co., has been transferred from Oakdale, La., to Jackson, Miss., and promoted to position of meter inspector.

JAMES BALLARD, district geologist for Tide Water Associated Oil Co., at Corpus Christi, Tex., has returned to his desk after a vacation visit to Mexico City.

T. R. ARMSTRONG, vice president of Creole Petroleum Co., sailed last week from New York on the Grace Liner Santa Rosa which was bound for Venezuela.

A. J. CROWLEY, formerly instructor of geology at the University of Wichita, Wichita, Kans., has resigned to accept a position with Lario Oil & Gas Co. at Wichita.

FRANK P. COLBY, chief title clerk for Carter Oil Co., Tulsa, is convalescing at his home in Tulsa after a heart attack on April 27. He was bedfast until July 10 and during the months of May and June was seriously ill.

GEORGE W. MARTIN as general superintendent and FRED A. GARRETT as purchasing agent and and building manager were two announcements made by R. G. SOPER, president and general manager of the Dallas Gas Co. and County Gas Co., subsidiaries of the Lone Star Gas Co. of Dallas, Tex. Mr. Martin succeeds R. M. REDDING, who resigned August 1 because of ill health Mr. Garrett formerly was assistant purchasing agent.

B. D. BAKER, with the Parker Drilling Co., and formerly located at Fort Worth, Tex., has been transferred to Houston as division manager of the Gulf Coast district.

GILBERT A. MANUEL, superintendent for Williams Brothers Corp., pipe-line contractors, married MISS CLARA VIRGINIA LUNDY at Boulder, Colo., on September 10.

W. A. GUINN of the Pawnee Royalty Co., San Angelo, Tex., whose company drilled the discovery well in the Falls City field of Nebraska, is building a large ranch home near San Angelo.

ROBERT CLARK, geologist for Skelly Oil Co., after spending several months in the company's Evansville, Ind., office covering the Illinois fields, has been transferred back to Wichita, Kans.

E. B. LYMAN, editor of the Standard Oil Co. of New Jersey official publication, "The Lamp," is visiting the offices of Standard Oil Co. of Louisiana at Shreveport, La., after a short visit at the Carter Oil Co. offices in Tulsa.

GEORGE THOMAS, formerly in Ohio Oil Co.'s geological and scouting department in West Texas and Southeast New Mexico, Midland, Tex., has been transferred to the Mount Pleasant, Mich., geological and scouting division.

LOUIS N. BEAL, JR., formerly in the operating department of Community Natural Gas Co. in Abilene, Tex., has been promoted to junior industrial engineer for the company in the northern zone of the Abilene division. R. O. PEARSON, JR., formerly subdistrict manager at Haskell, has been assigned to the southern zone of the division, and R. B. THOMPSON has been made junior engineer in the Corsicana, Tex., division.

Heads Skelly Marketing

Joe D. Powell, born at Bentonville, Ark., in 1890, is a typical son of the Middle West. After his graduation from the University of Missouri in 1914, he entered the banking business and 4 years later became cashier of the First National Bank at Nowata, Okla. Here he handled a great deal of business for oil producers and natural-gasoline manufacturers in northern Oklahoma and southern Kansas. His tenure with the bank was interrupted during the war, while he served with the Army Air Corps. Following his return from the service he continued with the bank until 1923, when he joined Skelly Oil Co. as credit man in the refining and marketing divisions at Eldorado, Kans. Shortly thereafter, he was elected assistant treasurer in charge of credits for the refining division.

JOE D. POWELL

At the time of the separation of the refining and marketing departments and consolidation of the various marketing activities under one head at Kansas City, he moved to that Missouri city as assistant secretary and treasurer in charge of all credits. About 3 years later added responsibility placed Mr. Powell in charge of marketing. His election to the office of vice president in charge of marketing was effective on September 1, 1940.

He is a member of two golf clubs, of which game he is a devotee. While he was in Nowata he was married to Virginia Payne, and they have two sons.

His new office places Mr. Powell in charge of all the marketing-department affairs of Skelly, which cover 17 states and are handled from the company's own office housing about 400 employes at Kansas City, Mo.

C. V. CAREY, independent oil operator formerly of Seminole, Okla., has moved his office and residence to Wichita, Kans.

AL A. THORNTON, HAROLD WESCOTT and WILLIAM L. MURPHY, all of Oklahoma City, Okla., last week organized the Premier Drilling Co. with offices in Oklahoma City.

H. B. DEMPSEY, formerly assistant foreman for Lone Star Gas Co. in its Ranger, Tex., pipe-line division, has been appointed foreman of the Ballinger, Tex., pipe-line district for the company.

ED REA, formerly assistant chief engineer, Great Lakes Pipe Line Co., Kansas City, Mo., has joined the organization of Williams Brothers Corp. and is now located at the company's Tulsa office.

S. F. BOWLBY, for several years division manager for Shell Oil Co., Inc., with offices at Iowa, La., has been appointed chief engineer, exploitation, of Shell, and will maintain offices in Los Angeles, Calif.

J. R. THOMAS, who was with California Petroleum Co. for several years and later with North American Oil Consolidated with offices at Taft, has been elected president of Richfield Consolidated Oil Co. and will maintain offices in Los Angeles. Mr. Thomas succeeds P. J. CRUMPTON who recently retired in order to take a long rest.

JAMES PARKER, division manager in Fort Worth, Tex., for the Arrow Drilling Co., has announced the moving of the company's Fort Worth office from the Neil P. Anderson Building to the Sinclair Building. The move was in connection with the consolidation of the firm's Odessa, Tex., office and the Fort Worth office. GEORGE ALLEN, formerly of Odessa, is in charge of the Fort Worth office.

JOSEPH C. BARRETT, for the past few years in the Turner Valley, Alberta, field, has left for Trinidad to take a drilling contract. Mrs. Barrett and family will follow in a few months.

O. H. COLLEY, of Houston, Tex., president of the Texas Association of Petroleum Retailers, was reelected president at the third annual convention of the association at Houston last week. WILLIAM G. AMANDSON, of Galveston, Tex., was elected vice president, and ART REICHART, of Houston, was elected secretary-treasurer.

Shifts: E. C. HEIDRICH, JR., manager, Black-Knight Oil Co., from North Point, Mich., to Peoria, Ill.; K. R. NEAL, president, Raymond Oil Co., from Ada, Okla., to Miami, Okla.; NORVEL DOUGLAS, president, Oil Activities, Inc., from New York City to Dallas, Tex.; EDWIN A. CLARK, engineer, Naph-Sol Refining Co., from Muskegon, Mich., to Green Bay, Wis.; MARVIN A. REMKE, engineer, Carter Oil Co., from Altamont, Ill., to Tulsa; V. L. DICKINSON, superintendent, Magnolia Petroleum Co., from El Dorado, Ark., to Smackover, Ark.; LEROY G. RODGERS, land and lease department, W. O. Allen, from Tuscaloosa, Ala., to Tulsa; WALTER J. WEISS, engineer, the Texas Co., from Torrance, Calif., to Los Angeles, Calif.

ARTHUR F. LEARY has been retired by the Atlantic Refining Co. after 51 years of service with that firm. He was employed at the former Eclipse plant of the company near Franklin, Pa., from 1898 to 1937 when he was transferred to Philadelphia. He will make his home in Franklin.

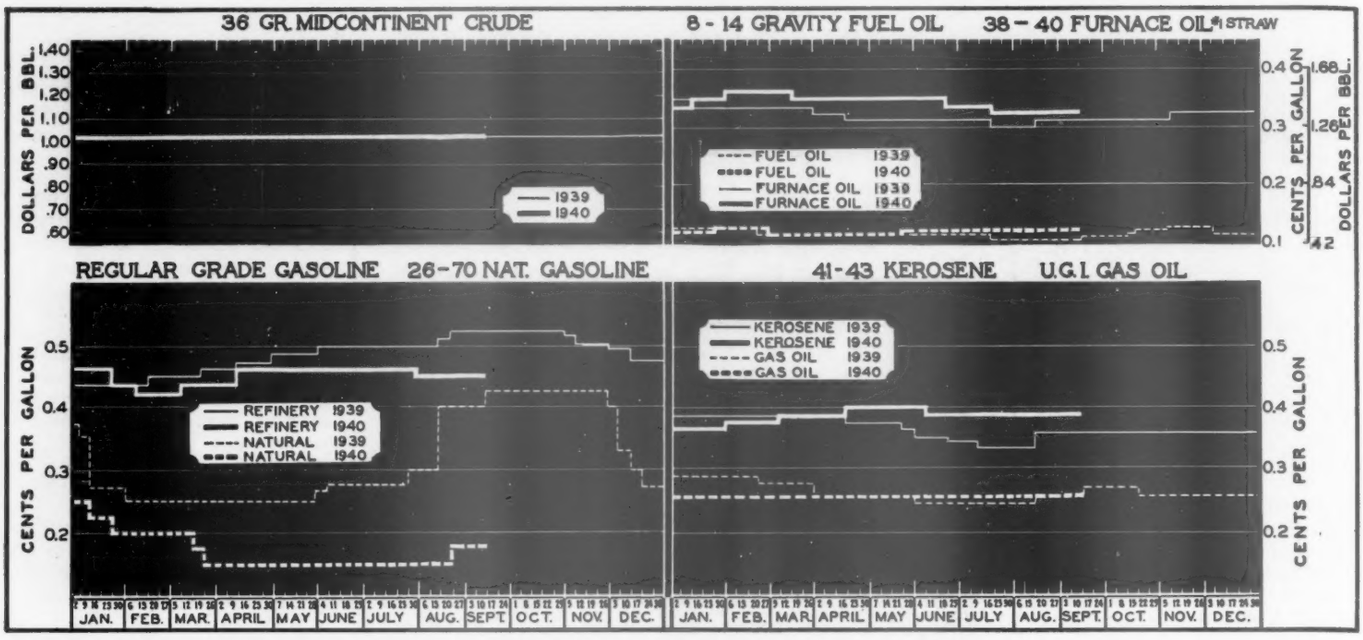
WILLIAM ASH WAID, oil and gas inspector of the Osage Indian Agency in charge of all field work in the Osage Nation, Oklahoma, was automatically retired September 2, when he became 65 years old. He has been Osage inspector since 1915. A native of Titusville, Pa., he owned and operated his own drilling tools in the Pennsylvania fields up to the time he entered government service. He is given chief credit for the 160-acre lease plan now in vogue in the Osage country. The Burbank, South Burbank, Naval Reserve and other big pools in Osage County were developed during his regime.

L. H. GRADDY of Dallas, Tex., and W. T. DANIEL of Oklahoma City, Okla., last week organized the Mid-Plains Drilling Co. with offices in the latter city.

JOHN KEENE, of Petrolia, Ontario, left recently via New York for Trinidad, British West Indies, where he will join the staff of the British Leaseholds Oil Co. at Port a Pierre.

GRADY T. CHUPP, following several years of service in Yugoslavia and Rumania, has established a drilling, contracting and well-servicing business at Nocona, Tex. Mr. Chupp was at one time a superintendent for a major oil company, and for a while operated as an independent producer.

MORGAN E. ROBERTS, district geologist for Pure Oil Co., JAMES F. BRANNAN of the land department, and PAUL R. MARTIN of the scouting department in West Texas and Southeast New Mexico, are now in charge of their respective departments at Midland, Tex., following the moving of the company's offices from Odessa to that city.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Good Gasoline Movement, Strength of Naturals Feature Group 3 Market

By D. H. STORMONT

WHILE quotations on the various grades of natural gasoline are less than half of what they were a year ago at this time, general feeling in that market is that coming weeks will see at least a small portion of this "slack" removed. No further advance was made in quotations during the week, following the ¼-cent increase of 2 weeks ago, but the market continued to strengthen and generally was characterized as tight. This development, combined with the exceptionally heavy replacement buying of gasoline to refill inventories depleted by the 3-day Labor Day holiday, featured an otherwise relatively quiet Group 3 market.

The recent advance in natural-gasoline quotations has done little to discourage buying, nor has it acted to stimulate the movement. Gulf Coast refiners are increasing their purchases for blending with gasoline in the manufacture of more volatile winter motor fuels, and there were reports that several cargoes of low-grade aviation fuel, containing a substantial blend of natural gasoline, had recently been shipped to Japan. In Oklahoma, 26-lb. natural moving into interstate shipment is obtaining 1¾ cents, and in North, Texas, 1.5 cents. A few cars of the 26-lb. product were reported moved intrastate last week at 2 cents.

Stored Naturals Being Withheld

Movement of natural gasoline at the present prices was described as good, but some manufacturers who have stored their production for some time were exhibiting no great hurriedness to move this material in expectation of higher quotations. They feel that the fall upturn in quotations, which ordinarily starts the latter part of July, has not yet been fully realized. Thus while they are willing to move current production at 1¾ cents, long-stored material is being withheld.

Replacement buying of gasoline after the Labor Day holiday proved to be about all that was hoped for as large orders followed the largest gasoline-consuming week end since Independence Day. Once the refilling of the holiday orders is taken care of, it is expected that jobber buying and contract shipments of gasoline will tend to fall off as the market settles into the fall and winter season. Also, as the Labor Day holiday usually is regarded as being near the end of the heavy gasoline-consuming season, it is expected that many refiners will now begin pointing their operations more definitely for autumn needs by shifting to heavier cuts of heating-oil fractions and lesser yields of gasoline.

Movement of gasoline, as well as other refined products, to northern water terminals has shown an increase during the past few weeks as refiners take advantage of the cheaper transportation rates offered by waterways while they remain open. This movement promises to continue during the next few weeks while storage facilities are being filled to serve the trade area after the waterways are closed. This movement, plus that to replace stocks depleted by the heavy Labor Day consumption, is expected possibly to result in a slight lowering of gasoline inventories at refineries in the Mid-Continent and central states.

Light Fuels Improving

Light fuel oils continue to show improvement in tone, with refinery shipments increasing as the season of their greatest consumption nears. A good movement at unchanged prices was reported, but there is an inclination on the part of most refiners to store their current production of heating oils in expectation of higher prices. Total stocks in the United States of these materials and gas oil are now some 7,000,000 bbl. above those at this time last year. Thus some market observers point out, perhaps hopefully, that this year it may not be necessary for refinery runs to be held at such high levels in order to satisfy the steadily growing market for domestic fuels.

Following reductions in quotations the previous week, the lubricant market was holding this week. With prices well below those quoted at this time last year, some lubricant manufacturers feel that coming weeks may see increased demand for bright stocks and neutrals. Especially so, if expected improvements in industrial conditions materialize.

Wax was reported to be in good demand and inquiries for burning oils and kerosene plentiful.

Refined Oil Market Barometer

The gasoline market continued weak at coastal points with reductions being made on the East and West Coasts despite unusually heavy replacement buying following the Labor Day holidays. Light and heavy fuels are showing increased activity, while the natural-gasoline market seasonally strengthens except on the West Coast.

MID-CONTINENT. Natural gasoline tight. Gasoline unchanged at good movement. Light fuels stronger.

EAST COAST. Widespread reductions in tank-car and tank-wagon gasoline. Light fuels tending to improve.

GULF COAST. Light and heavy fuels firm. Kerosene in little demand. Gasoline weak.

CALIFORNIA. Gasoline lower. Fuel-oil demand good. Natural gasoline weak.

PENNSYLVANIA. Gasoline in good demand. Kerosene and fuel oils more active. Wax up.

CHICAGO. Burning oils firming. Distillates and related fuels improved.

Eastern Coast Gasoline Market Exhibits Further Weakness

By J. P. O'DONNELL

NEW YORK, Sept. 10.—The gasoline market in the eastern area exhibited further weakness last week and as the result the widespread tank car and tank-wagon price reductions which were put into effect throughout the New York and New England region the week before were extended further. Standard Oil Co. of New Jersey announced reductions of 0.5 and 0.6 cent in a six-state area from New Jersey to South Carolina. Text of the company's announcement follows:

"Effective September 10, 1940, Standard Oil Co. of New Jersey will reduce tank-car and tank-wagon prices for Esso and Esso Extra ½ cent per gallon generally throughout Maryland, District of Columbia, Virginia, West Virginia, North Carolina and South Carolina, except at points now subnormal ½ cent or more there will be no change.

"In New Jersey the general reduction will be 0.6 cent per gallon, tank-car, tank-wagon and fair-trade minimum retail prices. Exceptions to this general reduction are being made at subnormal points.

"Reductions are made because of weakening in the primary markets."

Continued weakness at the Gulf was regarded as the cause of the tank-car and tank-wagon price cuts in the East. While most suppliers are quoting a price of 4 cents per gallon for high-octane leaded and somewhat lower-octane unleaded grades on the Gulf, quantities are reported available at 3⅞ cents.

Coupled with the weakness at the Gulf was a gain in gasoline inventories on the East Coast area during the week immediately preceding the Labor Day week end. Stocks jumped 403,000 bbl. to 21,776,000 bbl. as a full week of rainfall curtailed consumption. Consumption over the week end itself was described as satisfactory as New York City reported playing host to the largest number of week-end visitors in its history.

Gasoline price wars which have been under way at numerous eastern points in recent weeks reached their high point at Buffalo during the first part of last week. Inaugurated by a service-station operator who offered free oil with every purchase of 10 gal. of gasoline, it was followed by other operators giving 2 gal. of gasoline with every purchase of 8 gal. at the regular price. Others met the gift policy by cutting their prices to as low as 5 cents and others by giving cigarets with purchases of gasoline.

There was evidence of the possibility of strengthening in the light fuel-oil market last week as continued cool weather brought a resumption of demand for domestic heating oils. With the consuming season due in a short time, it is believed that prices have reached bottom for the year. The current price of No. 2 fuel oil, 4.1 cents per gallon, is apparently well maintained. However, there are two important factors affecting the fuel-oil market that may alter the situation one way or the other.

Tanker rates in the Gulf-to-north-of-Hatteras trade are now at the low point of the year, ranging from 18 cents for light crude oil and gasoline to 20 cents for light crude oil and No. 2 fuel oil. These rates fell to this point during the latter part of August and have been maintained since then, the steadiness during the interim possibly indicating the decline has been permanently arrested for the year.

The continued decline brought the average market freight rates for August, Gulf ports to New York, to 19.2 cents for dirty cargoes. This is a decline of 2.1 cents from the July average, 10.3 cents from the June average and 45.6 cents from the May average, the month during which belated fuel-oil demand and the preseason movement of gasoline combined to push tanker rates to the highest levels of years. The average dirty cargo rate of 64.8 cents per barrel in May compared with the 1937 peak of 55.6 cents per barrel in June of that year, the previous high. However, the fact that tanker rates averaged 3.6 cents higher in August this year than in the same month last year suggests that the tanker-rate factor this year will be stronger than it was in the fall of 1939.

Against the improved tanker rates, however, are the substantially larger inventories of gas oil and distillates that are on hand at present and will undoubtedly go higher before the season of heavy demand is really inaugurated. Almost 1,000,000 bbl. were added to refinery and terminal storage on the East Coast in the last week in August. Stocks on August 31 totaled 16,855,000 bbl., up 888,000 bbl. from the preceding week. Stocks on July 31 were estimated at 13,739,000 bbl. for the East Coast area so that the additions during the month of August totaled more than 3,000,000 bbl. An increase in inventories amounting to more than 22 per cent is certain to have an adverse effect on the market. The advancing storage level this year is a full month ahead of that of a year ago.

The current movement of heating oil from the Gulf to North Atlantic points is increasing and the arrivals of clean tankers in New York and other north-of-Hatteras points is comparatively heavy. As a result of this activity, the availability of clean tankers has declined inviting the possibility of improved rates. However, a number of tankers, chiefly dirty, remain tied up.

The export market continued dull. Evidence of some activity was seen in the approval of a number of foreign charters by the Maritime Commission. These included six tankers, two of which will load cargoes of motor gasoline at California ports on or about September 10 and 28 for U.S.S.R. Pacific ports, two to carry crude oil from Cartagena to Aruba and one which will carry a cargo

(Continued on Page 111)

Gulf Coast Markets

HOUSTON, Tex., Sept. 10.—Both heavy and light fuel oils displayed definite firmness on the Gulf Coast the past week. Although volume of spot sales was not great, little material was available, and suppliers were able to maintain quotations. Buyers seeking material were unable to fill their requirements in several instances.

Bunkering markets were steady at 80 cents despite the weakening of the past couple of weeks in the eastern seaboard market. Cargo price for Bunker C fuel also was quoted at a minimum of 80 cents with the majority of suppliers asking 85 cents.

Light fuels and burning oils were practically unobtainable for spot movement. Prospects of early buying in large quantity for early winter consuming needs were sufficient that refiners were not willing to quote except at a premium over current spot market quotations. Gas oil was being held from 3¼ to 3½ cents, with diesel index oils in relative proportion.

Kerosene also showed some stiffness in quotations although there was little demand for this product. Material was not readily available under 4 cents.

The story of gasoline continued one of inactivity with general weakness, and little prospect of any pickup. The depressing effect of excessive supplies still governed the situation. The only movement reported was the

(Continued on Page 111)

A.P.I. Weekly Refinery Statistics

Week Ended September 7, 1940

East Coast	100.0	21,930,000	11,987,000	17,232,000	583,000
Appalachian	91.0	3,215,000	546,000	526,000	110,000
Ind., Ill., and Ky.	90.2	14,260,000	3,505,000	5,539,000	563,000
Okla., Kans., and Mo.	76.9	6,292,000	2,184,000	1,654,000	263,000
Inland Texas	59.6	1,555,000	1,521,000	387,000	104,000
Texas Gulf	85.3	10,495,000	7,528,000	7,030,000	790,000
Louisiana Gulf	97.6	2,533,000	1,613,000	1,087,000	107,000
N. Louisiana and Ark.	51.5	535,000	508,000	301,000	42,000
Rocky Mountains	56.0	883,000	449,000	118,000	45,000
California	87.3	15,601,000	76,094,000	9,986,000	526,000
Total reported	85.3	77,299,000	105,935,000	43,860,000	3,133,000
Est. unreported	.....	6,995,000	2,145,000	1,645,000	367,000
*Est. total	.....	84,294,000	108,080,000	45,505,000	3,500,000
*Est. total previous wk.	.....	85,393,000	108,774,000	44,766,000	3,575,000
*September 8, 1939	.....	72,066,000	115,321,000	37,728,000	3,380,000

*Bureau of Mines.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATE)

Week ended August 31, 1940	265,865,000 barrels
Week ended August 24, 1940	263,802,000 barrels
Week ended September 2, 1939	236,643,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of September 10, 1940

Taxes

The gasoline quotations given in the following tables include the 1½-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank wag.	Dir.	Incl. tax	tank wag
Chicago, Ill.	15.6	13.6	4.5	10.0
Decatur	14.6	13.1	4.5	9.5
Joliet	15.6	14.1	4.5	10.0
Peoria	15.6	13.2	4.5	10.0
Quincy	15.4	13.9	4.5	9.8
Davenport, Ia.	15.6	14.1	4.5	‡10.0
Des Moines	15.4	13.9	4.5	‡9.8
Mason City	15.8	14.3	4.5	‡10.2
Duluth, Minn.	16.4	14.9	4.5	10.8
Mankato	16.0	14.5	4.5	9.0
Minneapolis	16.0	14.2	4.5	10.4
LaCrosse, Wis.	17.0	15.5	5.5	10.4
Green Bay	17.4	15.9	5.5	10.8
Milwaukee	16.8	15.3	5.5	10.2
Detroit, Mich.	14.1	12.6	4.5	7.6
Grand Rapids	13.7	11.2	4.5	9.0
Saginaw	14.9	13.4	4.5	9.1
Evansville, Ind.	16.6	15.1	5.5	†9.8
Indianapolis	16.8	14.8	5.5	†10.0
South Bend	16.8	15.3	5.5	†10.0
Fargo, N. D.	18.2	16.7	5.5	11.8
Huron, S. D.	17.5	16.0	5.5	10.9
Kans. City, Mo.*	14.9	13.4	4.5	8.0
St. Louis*	15.2	13.2	4.5	9.0
St. Joseph	14.9	13.0	4.5	7.9
Wichita, Kans.	13.8	12.3	4.5	7.0

*State tax 2 cents, 1-cent city tax, and 1½-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gal. or more, 1.5 cents off; minimum delivery 25 gal.

Stanolex Fuel Oil in Chicago

Effective Sept. 3, 1940, f.o.b. Chicago, tank-wagon prices: Standard heater oil, 1-99 gal., 8.75 cents; 100-149 gal., 7.75 cents, 150 gal. and over, 7.25 cents. Stanolex fuel oil No. 1, 1-99 gal., 8.5 cents; 100-149 gal., 7.5 cents; 150-399 gal., 7 cents; 400 gal. and over, 6.5 cents. Stanolex furnace oil, 1-99 gal., 8.5 cents; 100-149 gal., 7.5 cents; 150-399 gal., 7 cents; 400 gal. and over, 6.5 cents. Stanolex fuel oil A, 1-399 gal., 5.75 cents; 400-799 gal., 4.75 cents; 800 gal. and over, 4.5 cents. Stanolex fuel oil B, 1-399 gal., 5.75 cents; 400-799 gal., 4.75 cents; 800 gal. and over, 4.5 cents. Stanolex Bunker C fuel oil, 1-999 gal., 4.5 cents; 1,000 gal. and over, 3.5 cents.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline			Kero.
	Cons'r tank wag.	Divided dlr.	Incl. tax	tank wag.
Ohio points	16.0	15.0	5.5	*9.0

*Includes state tax of 1 cent.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			Kero.
	Cons'r tank car	Dir. tank wag.	Incl. tax	tank wag.
Atl'tic City, N. J.	12.1	13.2	4.5	7.4
Newark	12.1	13.2	4.5	7.4
Annapolis, Md.	13.85	14.85	5.5	9.5
Baltimore	13.25	14.25	5.5	8.5
Cumberland	14.65	16.65	5.5	10.0
Wash'gton, D. C.	11.50	12.50	3.5	9.5
Danville, Va.	15.45	17.95	6.5	11.0
Norfolk	14.25	16.75	6.5	10.5
Petersburg	14.55	17.05	6.5	11.2
Richmond	14.55	17.05	6.5	10.5
Roanoke	15.75	18.25	6.5	11.0
Charles'n, W. Va.	15.05	17.55	6.5	12.6
Parkersburg	14.35	15.85	6.5	11.2
Wheeling	15.35	17.25	6.5	11.8
Charlotte, N. C.	17.40	17.50	7.5	11.8
Hickory	17.95	19.45	7.5	12.3
Mt. Airy	17.80	19.30	7.5	12.2
Raleigh	17.15	16.5	7.5	11.5
Salisbury	17.45	16.50	7.5	11.9
Charleston, S. C.	15.25	17.75	7.5	9.75
Columbia	16.10	18.60	7.5	11.5
Spartanburg	16.80	19.30	7.5	12.7

Price basis to Essolene undivided dealers: Dealer tank-wagon price less 0.5 cent per gallon. Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at a time by hose connection, on yearly purchases: From 2,500 to 100,000 gal., consumer tank-wagon price at time and place of delivery; 100,000 gal. per year, consumer tank-car price plus 0.5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less 0.5 cent per gallon.

Effective January 16, 1939, in North Carolina the commercial consumer schedule became as follows: Single deliveries of 50 gal. or more, consumer tank-wagon price. Single deliveries of less than 50 gal., 4 cents per gallon over consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price, less 0.5 cent per gallon. The above policy also applies in South Carolina, effective January 23, 1939.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline			Kero.
	Cons'r tank wag.	Net dlr.	Incl. tax	tank wag
Atlanta, Ga.	16.0	16.0	7.5	10.0
Augusta	17.0	17.0	7.5	10.0
Macon	17.0	17.0	7.5	9.0
Savannah	16.0	16.0	7.5	9.0
Birmingham, Ala.	16.0	16.0	8.5	9.0
Mobile	16.0	16.0	9.5	8.0
Montgomery	18.5	18.5	9.5	10.0
Jackson, Miss.	16.5	16.5	7.5	9.0
Vicksburg	16.0	16.0	7.5	9.0
Jacksonville, Fla.	15.5	15.5	8.5	8.0
Miami	15.5	15.5	8.5	8.0
Pensacola	17.5	17.5	9.5	8.5
Tampa	18.5	15.5	8.5	8.0
Lexington, Ky.	14.5	14.5	6.5	9.5
Covington	15.0	15.0	6.5	9.5
Louisville	15.0	15.0	6.5	9.0
Paducah	15.5	15.5	6.5	9.0

Price basis to tank-wagon consumers, effective January 4, 1937, 3 cents per gallon below tank-wagon price.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax, and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent. All are included in the table.

Pennsylvania and Delaware

ATLANTIC REFINING CO.

	Gasoline			Kero.
	Cons'r tank car	Dir. tank wag.	Incl. tax	tank wag.
Philadelphia, Pa.	12.5	14.0	5.5	10.0
Pittsburgh	13.5	15.0	5.5	10.5
Allentown	13.5	15.0	5.5	10.5
Erie	13.5	15.0	5.5	10.0
*Scranton	12.5	14.25	5.5	10.5
Altoona	13.5	15.5	5.5	10.5
Dover, Del.		14.0	5.5	10.5
Wilmington		14.0	5.5	10.0

Price basis to undivided dealers, dealer tank-wagon price less 0.5 cent per gallon.

Discount on kerosene, 2 cents per gallon off tank-wagon price on tank-wagon deliveries of 25 gal. or more at one time.

*Voluntary discount of 1 cent allowed to dealers only.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline			Kero.
	Tank truck	Serv. sta.	Incl. tax	tank wag.
San Francisco	16.5	17.5	4.5	11.5
Los Angeles	16.0	17.0	4.5	10.0
Fresno, Calif.	17.5	18.5	4.5	12.5
Phoenix, Ariz.	20.5	21.5	6.5	*17.5
Reno, Nev.	19.5	20.5	5.5	13.5
Portland, Ore.	19.0	20.0	6.5	13.5
Seattle, Wash.	19.0	20.0	6.5	13.5
Spokane	20.5	21.5	6.5	16.5
Tacoma	19.0	20.0	6.5	13.5

*Includes 5-cent state tax.

Discount to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gal. and over, advance quantity discount extended at time of delivery, 3 cents. Service-station schedule applies on single deliveries less than 40 gal. On kerosene in tank-car, transport-truck, and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank wagon.

March 18, 1939, split dealer discount was canceled.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline			Kero.
	Cons'r tank car	Dir. tank wag.	Incl. tax	tank wag.
Albany	11.7	12.5	5.5	7.3
*Met. New York, Manhat., Bronx, Queens, Brklyn., Staten Island	11.8	13.0	5.5	7.6
Buffalo	12.6	13.6	5.5	7.5
Rochester	13.1	14.2	5.5	8.1
Syracuse	13.0	12.8	5.5	8.2
Portland, Me.	11.2	13.1	5.5	7.4
Manchester, N.H.	12.1	13.5	5.5	8.5
Burlington, Vt.	12.4	14.0	5.5	7.9
Boston, Mass.	10.2	10.5	4.5	7.7
Worcester	10.7	11.8	4.5	7.8
Hartford, Conn.	11.0	11.5	4.5	7.5
New Haven	10.9	10.0	4.5	7.0
Providence, R. I.	10.1	11.5	4.5	7.7

*Does not include 2 per cent city sales tax, which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Effective August 8, 1940, the company changed its commercial consumer policy in New York and New England to the following:

Full compartment deliveries: Accounts buying less than 20,000 gal. annually, 0.5 cent above the commercial-consumer price; accounts buying from 20,000 to 120,000 gal. annually, commercial-consumer price; accounts buying 120,000 gal. annually and above, 0.25 cent off consumer price. Split compartment deliveries: Delivery of less than a full compartment, 250 gal., commercial-consumer price plus 1 cent. Steel-barrel deliveries: Commercial price plus 3 cents.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline			Kero
	Tank wag.	Dir.	Incl. tax	tank wag
Denver, Colo.	13.5	...	5.5	10.5
Grand Junction	17.5	...	5.5	12.5
Pueblo	15.5	...	5.5	9.0
Casper, Wyo.	16.5	...	5.5	11.5
Cheyenne	14.5	...	5.5	11.0
Billings, Mont.	17.5	...	6.5	11.0
Butte	15.5	...	6.5	13.0
Great Falls	17.5	...	6.5	12.0
Helena	15.5	...	6.5	12.5
Salt Lake, Utah	16.0	...	5.5	14.0
Boise, Idaho	20.6		6.5	16.0
Twin Falls	21.6	21.6	6.5	16.5
Albu'que, N. M.	16.0	...	6.5	9.5
Roswell	14.0	14.0	7.0	8.0
Santa Fe	17.0	...	7.0	10.0

*Includes city tax of 0.5 cent. †Includes state tax of 1 mill.

Tank wagon represents price to consumers. Dealer represents price to dealers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero.
	Cons'r tank car	Dir. tank wag.	Incl. tax	tank wag.
New Orleans, La.	14.25	16.75	8.5	†11.0
Baton Rouge	15.25	17.75	8.5	‡10.5
Alexandria	15.25	17.75	8.5	‡10.5
Lafayette	15.50	18.00	8.5	‡10.0
Lake Charles	15.25	17.75	8.5	‡10.0
Shreveport	14.00	16.50	8.5	‡9.0
Knoxville, Tenn.	18.50	20.00	8.5	12.5
Memphis	16.50	18.00	8.5	11.0
Chattanooga	18.00	15.75	8.5	12.0
Nashville	17.50	16.50	8.5	11.5
Bristol	18.75	18.75	8.5	12.0

Essolene at dealer price less 0.5 cent per gallon to undivided dealers.

†Includes 1-cent parish tax and 1-cent state tax. ‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gal. or more in one territory take posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gal. at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less 0.5 cent per gallon. Kerosene prices include 1-cent state tax.

Effective February 24, 1939, the company reestablished in New Orleans the commercial consumer policy on motor fuel effective in the rest of the state.

Effective December 12, 1938, the company revised its commercial consumer policy on motor fuel in New Orleans, as follows: Single deliveries of less than 50 gal., consumer tank car plus 2 cents per gallon 50 to 199 gal., consumer tank car plus 1 cent per gallon; 200 gal. and over, consumer tank car plus 0.5 cent per gallon.

Oklahoma and Arkansas

CONTINENTAL OIL CO

	Gasoline		Kero.
	Tank wag.	Incl. tax	tank wag.
Texarkana, Ark.	13.5	5.5	7.0
Fort Smith	15.0	5.5	8.0
Little Rock	17.25	8.0	8.0
Muskogee, Okla.	13.0	5.5	7.0
Oklahoma City	11.5	5.5	6.5
Tulsa	12.5	5.5	6.0

Tank wagon represents price to consumers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline			Kero.
	Tank wag.	Dir.	Incl. tax	tank wag.
Omaha	17.0	15.9	6.5	9.0
McCook	17.5	14.4	6.5	9.5
Norfolk	17.5	15.4	6.5	9.9
North Platte	17.8	15.0	6.5	10.2
Scottsbluff	18.4	15.5	6.5	10.5

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Texas

	Gasoline			Kero.
	Tank wag.	Dir.	Incl. tax	tank wag.
Dallas, Tex.	11.5	15.5	5.5	6.0
Fort Worth	11.5	15.5	5.5	7.0
Houston	12.0	16.0	5.5	8.0
San Antonio	12.5	17.0	5.5	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	16.2
V.M.&P. naphtha	16.5
Cleaners' naphtha	15.5
Stanisol	15.5

*Prices include 3-cent Illinois tax but not 1-cent federal tax nor 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gal. lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Gasoline		Kero.
	Tank wag.	Incl. tax	tank wag.
Halifax, N. S.	24.5	10.0	18.0
St. John, N. B.	24.5	10.0	18.0
Montreal, Que.	24.0	8.0	16.5
Toronto, Ont.	24.5	8.0	17.0
Hamilton, Ont.	24.5	8.0	17.0
Winnipeg, Man.	27.5	7.0	22.5
Brandon, Man.	28.0	7.0	22.5
Regina, Sask.	25.0	7.0	20.0
Saskatoon, Sask.	28.0	7.0	23.0
Edmonton, Alta.	25.9	7.0	20.0
Calgary, Alta.	23.0	7.0	18.0
Vancouver, B. C.	21.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Standard Oil Co. (Indiana) September 1 reduced tank-wagon and dealer gasoline prices at Duluth, Mankato, Minneapolis and other Minnesota points 1 cent per gallon following a reduction of 1 cent in the state gasoline tax; September 3 reduced tank-wagon gasoline 0.5 cent at Evansville, Indianapolis and South Bend, cut dealer gasoline 0.5 cent at Evansville and 0.2 cent at Indianapolis and South Bend.

Standard Oil Co. of Ohio effective September 3 reduced divided dealer gasoline 0.5 cent in Cincinnati.

Imperial Oil, Ltd., effective August 31 advanced tank-wagon gasoline and tank-wagon kerosene 0.5 cent at Toronto and Hamilton; effective September 3 advanced tank-wagon gasoline 0.5 cent and tank-wagon kerosene 1 cent at Winnipeg.

Standard Oil Co. of New Jersey effective September 10 reduced tank-car and tank-wagon gasoline 0.5 cent generally throughout Maryland, District of Columbia, Virginia, West Virginia, North Carolina and South Carolina, except at points 0.5 cent subnormal. Changes are not shown in table.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of September 10, 1940

The quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils. Octane ratings in Middle West, Mid-Continent, and Southwest are based on A.S.T.M. method of testing.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.04½	.04¾
63-66 octane	.04	.04¼
60 octane and below	.03½	.03¾
60-62 400 grades:		
72-74 octane (regular)	.04½	.04¾
63-66 octane	.04	.04¼
60 octane and below	.03½	.03¾

NORTH TEXAS—

U. S. Motor grades:		
72-74 octane (regular)	.04½	.04¾
63-66 octane	.04	.04¼
60 octane and below	.03½	.03¾
60-62 400	.03½	.03¾

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
72-74 octane (regular)	.04¾	.05
63-66 octane	.04¼	.04½
60 octane and below	.03¾	.04⅛

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
72-74 octane (regular)		.04¾
60 octane and below		.04

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.04⅝	.04⅞
63-66 octane	.04¼	.04½
60 octane and below	.03⅞	.04⅛
60-62 400 grades:		
72-74 octane (regular)	.04⅝	.04⅞
63-66 octane	.04¼	.04½
60 octane and below	.03⅞	.04⅛

PENNSYLVANIA (inland refineries)—

74-76 octane (regular)		.06
72-74 octane		.05¾

CALIFORNIA (domestic movement)—

58-60 400, 65 oct. and higher	.05½	.07¼
54-58 U. S. Motor	.05	.06¼

EAST COAST (domestic)—

U. S. Motor grades:		
New York (Bayonne)*	.05¾	.06½
Philadelphia	.05½	.06½
Boston	.05½	.06
Baltimore	.05½	.07
Charleston, S. C.	.06	.07

*All grades of gasoline ⅛ to ¼ cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery ¼ cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
72-74 octane	.03⅞	.04⅛
70-72 octane	.03⅞	.04
68-70 octane	.03¾	.04
65-67 octane	.03¾	.04

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.01¾
Grade 18-55	.02	.02⅛

NORTH TEXAS—

Grade 26-70		.01½
Grade 18-55	.01¾	.01⅞

CALIFORNIA—

75-85 375-390	.04½	.05¼

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.01⅞

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110-flash, 540-550 e.p.	.03½	.03⅝
41-43 gr., 300-320 i.b.p., 110-125 flash, 500-520 e.p.	.03⅝	.03¾
46-48 gr., 210-230 i.b.p., 480-max., e.p.	.03⅞	.04

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

42-44	.03⅞	.04
41-43	.03¾	.03⅞

NORTH TEXAS—

41-43	.03¾	.03⅞

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.03¾	.04

ARKANSAS (Ark. and N. La. del.)—

41-43		.04¼

PENNSYLVANIA (inland refineries)—

46	.04⅞	.05
45	.04¾	.04⅞

CHICAGO (Based on Group 3)—

42-44	.04	.04¼
41-43	.03⅞	.04⅛

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04½	.05½

NEW YORK (Bayonne, N. J.)—

41-43		.048

GULF COAST (domestic)*—

41-43	.03⅞	.04

*Barge price ⅛ cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03½	.03¾
No. 1 prime white, 38-42	.03⅝	.03½
No. 1 straw, 38-40	.03¼	.03⅜
No. 2 straw, 32-36	.03¼	.03⅜
No. 3 zero to 10, 28-32	.03⅛	.03¼

NORTH TEXAS—

No. 1 prime white, 38-42		03½
No. 1 straw, 38-40		.03⅜

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.02⅞	.03

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36	.03¼	.03½

CHICAGO (Based on Group 3)—

Range oil	.03½	.03¾
No. 1 prime white, 38-40	.03⅜	.03⅝
No. 2 straw, 32-36	.03¼	.03½
No. 3, zero to 15, 28-32	.03⅛	.03⅜

NEW YORK (Bayonne, N. J.)—

*No. 1		.048
*No. 2		.041
*No. 4		.041

Barge deliveries ⅛ to ¼ cent under above tank-car price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil, under 35	.02⅝	.02¾
No. 5, low pour point, 18-22	.72½	.77½
No. 6, 15 and above, 8-14	.50	.55

NORTH TEXAS—

U.G.I. gas oil, under 35	.02⅝	.02¾
No. 5 low pour point, 18-22	.72½	.77½
No. 6, 15 and above, 8-14	.50	.55

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial		.70

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅝	.02⅞
No. 5, low pour point, 18-22	.75	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low pour point, 10-16	.60	.70
No. 6, 15 and above, 10-16	.50	.55

PENNSYLVANIA (inland refineries)—

36-40		.04

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.10	1.25
24 plus diesel, per bbl.	1.10	1.25
24 plus diesel (bunkers)	1.20	1.35
12-16 (bunkers at tidewater)	.75	.90
10-16 (cargo lots)	.65	.90
12-17 (tank cars)	.60	.75
10-17 (high sulfur)	.50	.65
San Joaquin Valley:		
10-18 (tank cars)	.50	.70
24 plus diesel, per bbl.	1.10	1.25
San Francisco:		
24 plus diesel, per bbl.	1.35	1.40
24 plus diesel (bunkers)	1.40	1.50
10-16 (bunkers)	.80	.85

GULF COAST—

No. 2 fuel	.03⅝	.03¾
43-47 diesel	.03⅛	.03⅜
48-52 diesel	.03⅛	.03⅜
53-57 diesel	.03¼	.03¾
58-and-above diesel	.03¾	.04
Diesel bunkers		1.50
Bunker C (bulk cargoes)	.85	.90
Bunker C (bunkers)	.80	.85

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.041
28-30 diesel (lighterage 6¼c per bbl.)		1.70
28-30 diesel (tank cars)		.041
Bunker C (to ocean-going ships in N. Y. Harbor	1.15	1.25
Industrial fuel (tank cars)	.033	.0385

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

200-210 D, 10-25		.18
150-160 D, 0-10		.13½
150-160 D, 10-25		.13
100-110 D. 0-10		.13
100-110 D, 10-25		.12½
Steam refined:		
600 dark green (untreated)		.07

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour point		.14½
15 pour point		.13½
25 pour point	.12	.14
Steam refined:		
600	.08	.09
650	.09	.10
600 flash	.10	.11
630 flash	.12	.13

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

0-10 pour point:		
150-3		.08
180-3		.08½
200-3		.08½
250-3		.10
280-3		.10½
280-4		.10
300-3½		.11
350-3½		.11½
400-3½		.12
500-3½		.12½
600-3½		.13
100-2½ paraffin oil, 10-25		.05¼
10-25 pour point:		
200-3		.08
250-3		.09½
280-3		.10
280-4		.09½

GULF COAST—

Pale oils:		
100-3	.05½	.05¼
200-3	.07¼	.07¼
300-3	.07½	.07⅝
500-3½	.08¼	.08½
750-3½	.08⅝	.08¾
1,200-3½	.08¾	.08⅞
2,000-4		.09
3,000-4		.10½
Red oils:		
200-5-6	.06⅞	.07
300-5-6	.07¼	.07½
500-5-6	.08	.08¼
750	.08⅝	.08½
1,200-5-6	.08½	.08⅝

CALIFORNIA (moving to dom. market)

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis., at 70° F., 3 color, 400-405 flash.		
Zero pour point		.22½
10 pour point		.21½
15 pour point		.20½
25 pour point	.19	.20
200 vis. at 70° F., 3 color:		
Zero pour point		.24½
10 pour point		.23½
15 pour point		.22½
25 pour point	.21	.22

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (A.m.p.) w.c. scale	.02½	.03

PENNSYLVANIA (inland refineries)—

122-124 (A.m.p.) w.c. scale	.02¼	.02½
124-126 (A.m.p.) w.c. scale	.02¼	.02½

NEW YORK—

Wax in bags fully refined:		
125-127 (A.m.p.) wax		.0560
128-130 (A.m.p.) wax	.0560	.0570
130-132 (A.m.p.) wax		.0585
133-135 (A.m.p.) wax		.0615
135-137 (A.m.p.) wax		.0640
Crude scale:		
124-126 (A.m.p.) w.s.	.02¼	.02½
124-126 (A.m.p.) y.s.	.02¼	.02½
Petrolatum in barrels, carload lots:		
Dark green	.02125	.02625
Amber	.02375	.02875
Extra amber	.02625	.03000
Lily white	.04375	.05125
Snow white	.05125	.06000
Cream	.03375	.04125

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.03⅞	.04
60-62 400	.03⅞	.04¼
61-63 390	.03⅞	.04¼
64-66 375	.03⅞	.04⅛

LOS ANGELES—

U. S. Motor grades:		
Above 69 octane	.06¼	.06½
65-69 octane	.05¾	.06¼
60-65 octane	.05¼	.05¾

KEROSENE

GULF COAST—

41-43 water white		.04

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s. in bbl.)—

Cylinder stocks:		
600 S.R. unfiltered		.16
630 S.R. unfiltered		.17
600 flash, S.R.		.18
650 flash, S.R.		.20½
Bright stock:		
Light, 25 pour point		.21

NEUTRAL OIL

200-3 color		.27
150-3 color		.25

PARAFFIN WAX

NEW YORK (prices per lb.)—

123-125 A.m.p.		.05600
125-127 A.m.p.		.05600
128-130 A.m.p.		.06150
133-135 A.m.p.		.0640
135-137 A.m.p.		.07150
Crude scale:		
124-126 w.s.	.02½	.02⅝
124-126 y.s.	.02	.02⅛

EQUIPMENT PROGRESS...

Security Has Display at "Boom Town" Opening

When M-G-M's oil-field saga, "Boom Town," came to the motion picture capitol for its opening, theatergoers had the opportunity to examine modern oil-field equipment displayed in the fore court of the world-

famed Grauman's Chinese Theater. Here is pretty Usherette Betty Coombs posed with a Sievers reamer and various Security Engineering Co. drillable production accessories.

Riley Made Sales Supervisor for American in Ark-La-Tex Area

John R. Riley who for the past 14 years has been associated with American Iron & Machine Works Co. in various capacities in Oklahoma, Kansas, North Texas and Illinois, has been transferred to New Orleans to direct activities of his company in Louisiana, Arkansas, East Texas and Mississippi. In his new position he will be in charge of Harvey and New Iberia machine shops and supervise all sales in the above territories. Mr. Riley has been headquartering in Oklahoma City, Okla., for the past 10 years. He has a wide background and acquaintance in equipment and production circles, having spent several years with the Oil Well Supply Co. and as purchasing agent for the Watchorn Oil & Gas Co. before becoming associated with the American Iron & Machine Works Co. in 1926.

J-M Guarantees Jobs to All Employes Called to Service

Calling upon Johns-Manville's 10,000 employes for full support of the national-defense program, Lewis H. Brown, president of Johns-Manville Corp., New York City, in a recent statement promised that all employes of the company who may be called by the government for a year's military training under the proposed selective service or National Guard acts will be reemployed upon their return from training.

In the event of the passage of the Selective Service and National Guard acts, employes called for a year's military duty will be reemployed without loss of continuity of service or other service benefits at the time of their return from this training, Mr. Brown said. During this peacetime training period, he explained, Johns-Manville will keep up premium payments on such life insurance and health and group accident insurance as the employes may be carrying through the company at the time they are called to service.

New Swing Joint for Steam Lines

For handling steam pressures up to 100 lb., a simple and effective swing joint has been developed. The sealing unit is a specially shaped and compounded rubber gasket. This gasket contains a percentage of very finely divided metallic lead, milled directly into the rubber. Because the lead acts as a lubricant, the joint turns freely under pressure. The gasket is expanded slightly by the heat, which helps to maintain a perfect seal.

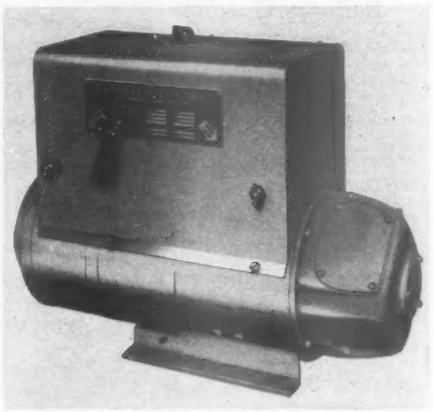
By equipping steam lines with a swing joint of this type a flexible connection is maintained by the pipe to actuate movement of mechanism. The joint is made of heavy bronze, weighs approximately 4½ lb., and is available only in the ¾-in. straight style. The product is made by Patterson-Ballagh Corp., 1900 East Sixty-fifth Street, Los Angeles, Calif., manufacturer of rubber specialties and equipment requiring the use of rubber.

Gas-Driven Turbines Ordered From G.E. for Oil Refiners

Orders for two gas-driven turbines, the first to be built for sale by the company, have been received by the General Electric Co., Schenectady, N. Y. One unit will be used by a California oil refinery and the other by a Texas refinery. Details of the machines cannot be revealed since the catalytic processes in which they will be involved are secret. Fundamentally, however, they will be similar to usual steam turbines except that they will operate on high-temperature byproduct gases which would otherwise be wasted. The units will be rated 3,250 hp. and 400 hp.

New Direct-Current Arc Welder Is Announced by General Electric

The General Electric Co., Schenectady, N. Y., has announced a new 200-amp., d.c. arc welder which will provide any welding current from 25 to 250 amp. This



wide range allows all-day manual welding to be done with currents up to 200 amp., using electrodes from $\frac{1}{8}$ to $\frac{7}{32}$ in. in diameter. Capacity is also provided for the use of electrodes as large as ¼ in. on short jobs.

The new arc welder has two outstanding features. First, it porvides for instant recovery of the voltage to an extent greater than the arc voltage after each short circuit, thus preventing time-wasting arc popouts. Second, it never allows current peaks to exceed three times the steady short-circuit current on any adjustment, thus preventing excessive heat and spatter and resulting in a saving of electrodes. Both of these features are made possible by a split-pole crossfield design with which the equipment is provided.

Other advantages of the new arc welder include excellent commutation; isothermic overload protection for the motor; self-excitation, which does away with the necessity for an extra generating unit; quick adjustment of welding current, and horizontal mounting. Self-sealed ball bearings are used. An improved, highly efficient ventilating system prevents overheating even when the welder is operated within the proper range hour after hour. A full range of current adjustment is obtained without the use of a current resistor. This results in a saving of 10 to 15 per cent of power costs.

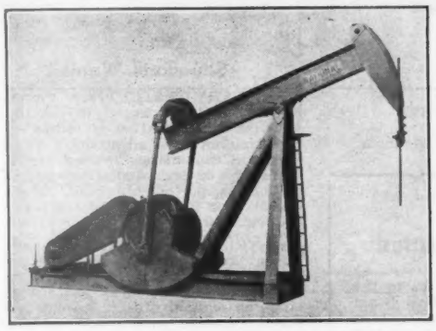
NEW LANE-WELLS HEADQUARTERS AT NEW IBERIA

To meet a steadily increasing demand for gun perforating and Electrolog services in the gulf area, Lane-Wells recently completed a new office building and shop at New Iberia, La. A new Electrolog unit, consisting of instrument car and service truck has been completed and assigned to the district. A second Electrolog unit will be delivered in the near future. The New Iberia district is under the management of K. K. Gage. Personnel at New Iberia includes R. F. Bryant, C. W. Herron, L. E. Manes, and G. C. Robinson, gun perforator operator; W. M. Farnsworth and C. J. McWhorter, Electrolog operators.

C. J. McWhorter and W. M. Farnsworth, Lane-Wells Electrolog engineers stationed at New Iberia

National Supply Announces Addition to Pumper Line

The National Supply Co., Pittsburgh, Pa., announces the addition of a new member of its line of unit pumpers Designated as Type TUS 464-HD46TB, it is a twin-



crank unit and designed for the heavier requirements of medium pumping service. It is made with a subbase between the frame and the reduction gear to enable the cranks and counterweights to clear the derrick floor or a flat concrete pad.

General features of the new pumper are: (1) Arc-welded construction for maximum strength and rigidity with less weight; (2) adaptability to either high, medium, or slow-speed prime movers, by means of reduction gear ratio and variation in V-belt sheaves; (3) short-frame base, to which an extension base with slide rails for various types of prime movers is bolted, making changes in the field comparatively simple and inexpensive; (4) changing V-belt sheaves is facilitated by a tapered shaft which includes a locking device and a puller for easy removal; (5) symetrical construction prevents any tendency toward misalignment through unequal wear and distortion.

The A.P.I. peak torque rating is 113,000 in. lb. at 20 s.p.m.; reduction-gear ratio, 29.6; A.P.I. safe load of walking beam, 15,100 lb.; maximum polished-rod stroke, 54 in. Regular equipment includes National Type B eccentric cranks, and National disk-type counterweights, which give infinite and continuously variable adjustability both in counterweight effect and in degree of lag and lead. The counterweights are of the one-piece type, locked securely in position on the outside rim of the crank.

New Retreading Stock Improves Tire Mileage

Development of a new type of "Camelback"—the humped rubber strips used in the tire-retreading process—providing greater mileage and increased adhesion, is announced by B. F. Goodrich Co., Akron, Ohio. Called Super-Mileage Camelback, the new material, made of first-quality tire-tread stock, is the result of two major improvements in the processing and handling of the material itself.

Instead of spraying the entire compound with solvents to obtain adhesion, as in other Camelback-making processes, Goodrich has developed a technique which treats only a thin layer of the tread compound. The result is a product in which the penetrating depth of the solvent is controlled, providing a soft, adhesive surface that flows freely into the rasped surface of the retreaded tire, leaving the rest of the compound strong and tough. Other advantages of the Super-Mileage stock, according to the company's engineers, is its increased resistance to heat, assuring less likelihood of overcuring in the retreading or recapping operation, and resistance to separation. The second improvement in the compound is the use of Textolin, or varnished cambric cloth, instead of the conventional holland fabric, to prevent the Camelback from adhering together in the uncured state. The new cambric cloth also prevents the application surface of the Camelback from drying out.

Foxboro Names Bumstead-Woolford Northwest Sales Representative

C. E. Sullivan, vice president and sales manager of Foxboro Co., Foxboro, Mass., announces the appointment of Bumstead-Woolford as exclusive sales representatives for the Oregon and Washington territory. The arrangement became effective as of August 1. The firm of Bumstead-Woolford was recently formed by Dale Bumstead and O. H. Woolford, both of whom have wide acquaintance and long records of experience in fields of industrial engineering. In addition to the Foxboro line, they will represent a number of other nationally known and noncompetitive industrial equipment manufacturers. The new firm has established its head office at 1411 Fourth Avenue, Seattle, Wash.

New Method of Packing Swab Cup Assures Fresh Stock

The Guiberson Corp. has announced a new method of packing swab-cup assemblies in the tubing sizes. sealed, air-tight tubular containers. This modern packing assures the producer of fresh stock at all times, as the air-tight features will delay deterioration of the rubbers caused by atmospheric changes. On the container is shown the size and type and

Since July 1 the cup assemblies have been packed in package and complete engineering data covering both the swab and cup assembly.

Westco Boiler-Feed Systems Cut Fuel Consumption

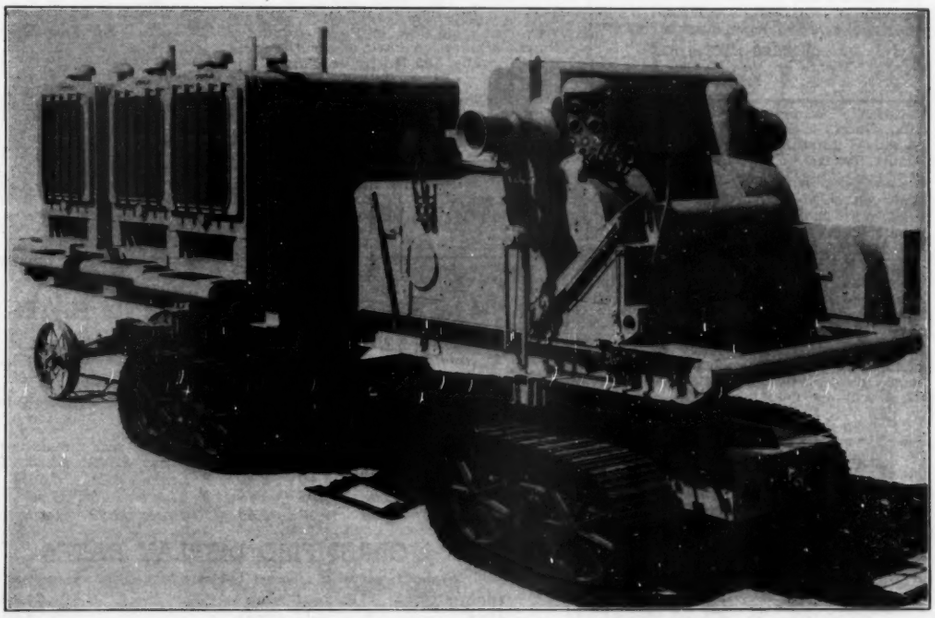
Planned especially for boilers up to 750 hp. and 200-lb. pressure, Westco automatic boiler return systems incorporate a number of exclusive features designed to help operators reduce fuel consumption, cut labor costs and increase plant efficiency. These compact, easy-to-install systems, made by Micro-Westco, Inc., Bettendorf, Iowa, (1) automatically return all condensate to boiler, from both high and low-pressure equipment; (2) add makeup water as needed to compensate for loss of live steam; (3) maintain a uniform water level in boiler; (4) keep return lines constantly open; (5) eliminate back pressure on return lines; and (6) feature low-cost operation and maximum reliability.

Each combination is equipped with a Westco turbine-type pump having patented, renewable liners. This advance construction is backed by over 20 years' experience in the manufacture of dependable condensate return equipment, permits alterations in performance without changing the entire unit. Renewable liners also guard against costly breakdown losses, for it is only necessary to carry an extra set of liners and impeller at about one-third the cost of a replacement pump. Oversize shaft and bearings, with patented bearing adjustment for centering impeller, prevent galling, and offer further protection against maintenance expense.

Another money-saving feature is the automatic boiler-water-level control which performs three vitally important duties. First, it starts and stops the boiler-feed pump to maintain the water level in the boiler within a ¾-in. range. Second, it cuts off the burner or stoker if the water in the boiler should reach a dangerously low level. And, third, it can be wired to sound an alarm when the low cutoff point is reached. Control is fitted with monel float, has specially constructed bellows to eliminate packing, and is constructed with all operating parts isolated from steam and hot-water zone. Additional equipment includes receiver, stand, thermometer, gage, makeup valve and strainers.

WILSON SHIPS GIANT MODEL RIG TO SOUTH AMERICA

John H. Wilson, president of Wilson Manufacturing Co., Inc., Wichita Falls, Tex., announces the shipment of a Wilson Giant Model streamlined rig to South America where it will be in operation. The Giant rig will drill wells to 6,000 ft. with 4½-in. drill pipe and to 8,000 ft. with 3½-in. drill pipe. It is equipped with: Friction clutches on both drum clutches, on rotary drive, and on pump drive through a two-pump jack shaft; air controls on both drum and chain transmission clutches; centrifugal pump driven from the draw works engine output shaft that will furnish water for the cooling system for both drum clutches and brake rings, single-stage air compressor also driven from draw-works engine output shaft which will furnish air under pressure for operation of drum and transmission clutches; brake rings specially flame hardened and ground; powered by Caterpillar D-17000 full diesel engines, equipped with two-pump jack shaft from the rear or pump engine; oil-bath chain compound drives are so arranged that the power from the three engines may be combined either to draw works or the pump drive, two engines can be used on the draw works and one to the pump, or two to the pump and one to the draw works.



The entire unit is mounted complete on Model ET 1025 Athey truss wagon with 24-in. heat-treated tracks; this arrangement means that no dismantling of the unit is necessary when moving between locations. The only disconnection necessary will be breaking the chain to the rotary table and removing the V-belts.

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SPECIALIZED Geophysical investigations conducted for petroleum promise. In touch with many opportunities to and for development of drilling blocks. P. O. Box 364, Fort Worth, Texas.

FOR SALE Oil and gas leases and small production located in Kentucky shallow field, also tracts of proven Fluorspar and zinc deposits. Reports on request. W. P. HARLEY, Bowling Green, Kentucky.

OIL PRODUCTION or lands, large and small. If in the market to buy or sell we should do some trading. Will offer nothing I will not help buy.

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Box 13, Alanreed, Texas.

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HARRY S. WRIGHT
New Mexico State Lessee
Wright Bldg., Farmington, New Mexico

CRANE-WARD County 20 ac. cheap in fee, under Magnolia lease. J. G. SMITH, 215 Littlefield Bldg., Austin, Texas.

NEW MEXICO
Oil and Gas Leases and Royalties.
ROY G. BARTON, Hobbs, N. M.

WELL LOGS, Drillers' logs of approximately 4,000 wells drilled in New Mexico are available from Well Log Division, New Mexico Bureau of Mines & Mineral Resources, Socorro, New Mexico. Write for price list C.

SEMI-PROVEN acreage, Yoakum Co., Texas, 10 yr. oil and gas lease for sale on S. Half Sec. 596 at $60 per acre. Dr. J. A. Robinson, Veterans' Adm. Facility, North Little Rock, Arkansas.

Leases and Drilling Blocks

FOR SALE—10 acres in Johnston Co., Okla.; 10 acres in Sequoyah Co.; 10 acres in Cherokee Co. Barry, 3505 Legation St. N. W., Washington, D. C.

OPERATORS: I have several blocks leases Huerfano County, Colo., new oil field for drilling 1,500 to 3,500 feet to production for interest and bottom-hole money. S. W. Pressey, Box 614, Pueblo, Colo.

MOONEY well tested 900,000 cu. ft. Drilling 7 wells, 280 acres, pipelines in, contract for gas 8c per 1000 cu. ft. ⅛th. per 40 acres, 1 well—$112.50 maps, information.

BOX 382, OSAWATOMIE, KANSAS.

EAST TEXAS Trinity sand wildcat starting. Close in leases afford you ten to fifty for one bets next sixty days. E. CROFT, PROCTOR, TEXAS.

SOUTH Louisiana Producing Royalties: Wildcat leases and shooting blocks, inquiries invited. John Derryberry, Box 304, DeRidder, La.

EAST Texas oil leases. $2.00 acre. Near test and large Co. holdings. L. Lahm. 2931 Missouri Ave., St. Louis, Missouri.

OPPORTUNITY for you in Bates County, Missouri, well just spudded in. John Eger, Rich Hill, Missouri.

NATURAL GAS pays big net returns. Have 800 acres direct offset to 4 wells just completed for 800,000 cu. ft. each. 500 feet to pay. Will assign 80 acres and complete well for $1,000.00. 8c pipe line market. Write, H. B. Snyder, Box 126, Ottawa, Kansas.

DESIRE first mortgage loan of $65,000 on large oil lease with twenty wells producing and eighteen more inside proven locations. Most rigid investigation invited. Address Box K-770, The Oil and Gas Journal, Tulsa, Oklahoma.

HAVE lease on school and church grounds which join in Sec. 8, 2S-7E, Western Wayne County, which is ½ mile south of Black Panther 1000 bbl. well brought in recently. Want lease drilled at once. Have 200 acres in Clay County, Illinois near production, 180 in Fayette County, Illinois, 5 miles northeast of Bond County Spindler wells. Leo H. Graves, Farina, Ill.

HAMILTON, Wayne and Jefferson county wildcat drilling blocks with great possibilities. Drilling deals wanted. Write Box 5, Dahlgren, Ill.

Financing

JOHN MORRIS, Box 5411, Philadelphia, studied records 5000 financial houses. Found only 191 buy new issues. $4.00.

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Situations Wanted

REFINERY EXECUTIVE thoroughly trained and experienced in design construction and operation of refineries and the manufacture of all products. Efficient, energetic, diplomatic. Desires permanent connection or design construction and operation on partnership basis. Now employed. Box K-675, The Oil and Gas Journal, Tulsa, Oklahoma.

INSTRUMENT ENGINEER: Young college graduate, now employed in research laboratory of major company on design and testing of bottom-hole pressure gages, sampling equipment, etc. 3 years' experience. Familiar with geophysical operations. Desires laboratory or field position. Address Box K-761, The Oil and Gas Journal, Tulsa, Okla.

Help Wanted

DESIRE to contact rotary drillers who worked in Wyoming prior to 1929. Address P. O. Box 2603, Tulsa, Oklahoma.

WANTED: Experienced micropaleontologist for duty in West Indies by a major oil company. Applicant should be competent and have good background in study of Tertiary and Upper Cretacious Faunas. South American or Mexican experience and a knowledge of Spanish desirable but not essential. All replies should give experience in detail, advise age and marital status, state salary expected. Box K-751, The Oil and Gas Journal, Tulsa, Okla.

WELDING engineer, graduate metallurgist with experience in welding practice. Battelle Memorial Institute, Columbus, Ohio.

Ranches—Farm Lands

1565-ACRE White Clover Stock Farm, rich, black, sandy land. 850 acres open, on river road highway and Mississippi River. Price $26.00 per acre. Terms. Write P. O. Box 429, B. E. PERKINS, Baton Rouge, Louisiana.

278,000-A. New Mexico Ranch, valleys & mountains, year-round pasture for cattle & sheep, highly improved; superb hunting & fishing—America's most magnificent ranch at a bargain. Howard Ingram, Perrine Bldg., Oklahoma City, Oklahoma.

Investment Wanted

AN INVESTMENT OPPORTUNITY OR MANUFACTURER to distribute new radically different drill bit proved 25% to 65% more efficient than the fish tail. Investigate or send representative for detail. Kless, 414 Stratford, Houston, Tex.

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MAJORS — INDEPENDENTS — WILDCATTERS—When you drill for Oil and Gas wouldn't you like to be sure? The Gravitational Selector works quickly, scientifically, satisfactorily or there is no charge. If you are satisfied pay us from production. Regardless of how you have located your wells heretofore we believe we can give you additional safeguards ahead of the drill. For particulars write Gravitational Selector, 14957 Lakewood Heights Boulevard, Lakewood, Ohio.

Mailing Lists

ROYALTY owners, Oil investors, Unit holders, Stockholders in Oil and Royalty Companies. Personnel lists of every branch of oil industry. All by States. We buy lists. New catalogues ready. Oil Industry Mailing List Co., Tulsa Loan Bldg., Tulsa, Oklahoma.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CAPITAL SEEKERS

Put your project before 260 Key-Men. Cost trifling. Details free. AMSTER LEONARD, Fox Theater Building, Detroit, Michigan.

CLASSIFIED ADVERTISING RATES

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgment is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times		1 time	2 times	3 times	4 times
3 Lines	$1.05	$1.80	$2.55	$3.30	7 Lines	$2.45	$4.20	$5.95	$7.70
4 Lines	1.40	2.40	3.40	4.40	8 Lines	2.80	4.80	6.80	8.80
5 Lines	1.75	3.00	4.25	5.50	9 Lines	3.15	5.40	7.65	9.90
6 Lines	2.10	3.60	5.10	6.60	10 Lines	3.50	6.00	8.50	11.00

CLASSIFIED DISPLAY RATES

Classified Display is set with a border and may be used in one or two column sizes.

1 Inch	1 time	$5.00
1 Inch	13 times	4.50 per inch
1 Inch	26 times	4.00 per inch
1 Inch	52 times	3.50 per inch

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

Equipment Wanted

WANTED: A Cracking Unit between 300 and 700 barrel capacity. Address—Cracking Unit, Box 1281, Tulsa, Okla.

For Sale—Equipment

IN THE DISTRICT COURT OF THE UNITED STATES FOR THE WESTERN DISTRICT OF OKLAHOMA.

Income Shares Corporation, a corporation, Plaintiff, vs. T. C. Iglehart, Incorporated, et al, Defendants. } No. 338

NOTICE OF RECEIVER'S SALE

Notice is hereby given that the undersigned receivers, pursuant to order of the United States Court for the Western District of Oklahoma, will sell for cash to the highest bidder, beginning at 10 o'clock, A.M., on Tuesday, September 17, 1940, at the company's tool house on the Zoeller lease in Section 4, Township 6 North, Range 5 East, Pottawatomie county, Oklahoma, the following described property belonging to the estate of T. C. Iglehart, Incorporated:

ZOELLER LEASE:
Two 500 barrel steel oil tanks
One Steel Drilling Derrick

KEINER LEASE:
Six 500 barrel steel oil tanks
One Steel Drilling Derrick

PHILLIPS "B" LEASE:
Five 500 barrel steel oil tanks
One Steel Drilling Derrick

PHILLIPS "A" LEASE:
Three 500 barrel steel oil tanks

KENNEDY LEASE:
Two 500 barrel steel oil tanks

LACK LEASE:
One 500 barrel steel oil tank

CAMPBELL LEASE:
Two 500 barrel steel oil tanks
One Steel Drilling Derrick

CURLEY LEASE:
Five 500 barrel steel oil tanks
One Steel Drilling Derrick
and miscellaneous connections and material used in conjunction with the above tanks and derricks;

The receivers reserve the right to accept or reject any bids, and all bids will be subject to confirmation by the court.

D. W. OHERN
ELMER HARBER
Receivers for T. C. Iglehart, Incorporated.

TRACTORS

Caterpillars, crawler type, size "35," $375; size "65" with nigger-head winch $750: Caterpillar RD8 with bulldozer $2000; Allis-Chalmers Model L with bulldozer $1750. Guaranteed, slightly used. O. C. Evans, Mt. Sterling, Ky.

For Sale—Equipment

For Sale—Equipment

For Sale—Equipment

SPECIAL OFFERING—PUMPS—ALL SIZES AND TYPES

- Simplex and Duplex Steam Driven Pumps
- Centrifugal Motor and Turbine Driven
- Jerker Type Pumps

ALL THOROUGHLY OVERHAULED AND IN A-1 CONDITION

— PRICED FOR IMMEDIATE SALE —

SONKEN-GALAMBA SUPPLY COMPANY

W. C. Berry and H. J. Galamba
Riverview at Second, Kansas City, Kansas

Robt. W. Duden
2100 S. Union, Tulsa, Oklahoma

FOR SALE

Either or both of these drilling outfits at reasonable price if taken at once.

1—Jumbo D Fort Worth Spudder complete with either diesel or gas drilling unit. Tools from 15-in. to and including 5-in. This outfit now running east of St. Joseph, Mo., in Forest City basin.
1—Wichita Falls 56 Heavy Duty Spudder with or without diesel power unit and tools from 18-in. to 5-in. Now running at Lost Springs, Kans.

ALSO
53 ft.—15-in. 60-lb. Casing
200 ft.—12-in. 60-lb. Casing.
1,400 ft.—10-in. 45-lb. Casing.
1,500 ft.— 8-in. 32-lb. Casing.
2,300 ft.—6⅝-in. 24-lb. Casing.

The Veeder Supply and Development Co.
P.O. Box 270
Cherryvale, Kans.

FOR SALE—Or will trade for old or discarded material, reconditioned pipe, casing and supplies, for cable tool drilling. Lee Morrison Supply Co., Bartlesville, Okla.—Tulsa Representative, phone 4-3355.

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air compressor. Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.

Terms to suit.

CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St., Cincinnati, Ohio

REFINERY PRICED FOR QUICK DISPOSAL. 500-barrel topping plant well equipped located Farmington, New Mexico. AMERICAN INDIAN OIL & REFG. CO., Farmington, N. Mex.

FOR SALE

One gasoline drilling rig with two 85 H.P. Waukesha motors and unitized draw works complete.

10,000 Ft. 2½" seamless tubing, used in flowing wells only.

10,000 Ft. 7" O.D. 26# seamless casing, once run.

15,000 Ft. 4½" O.D. seamless drill pipe equipped with both regular and full hole tool joints.

In addition to the above we have 20,000 Ft. screw line pipe in Oklahoma; also drilling rig capable of drilling to 6500 feet, complete stock of line pipe, casing, drilling and pumping equipment.

Wire, Write or Phone for Prices.

Louisiana Iron & Supply Co.
Shreveport, La.

ONE 7' x 12' two-door steel tool house. One 4-in-line roller bearing crown block with 36" maganese steel sheaves on 20" beams. A-1 shape. 1300 Ramsey Tower, Oklahoma City, Oklahoma.

FOR SALE
PRACTICALLY NEW 3½" DRILL PIPE
Drilled only 250 feet
3,750 feet 13.30 lb. Grade D, Pittsburgh Special, Internal Upset, with Reed Full Hole Tool Joints, Used by Morter Drilling Company of Ardmore to drill in only four wells approximately 50 feet each. Located at Me-Tex Supply Company, Hobbs, New Mexico.

LUCEY PRODUCTS CORPORATION—TULSA

BUCKEYE PIPE LINE DITCHER

Model 36—Capacity 18" to 30" Wide, 5½ Ft. Deep—Twin City Engine—Good Shape —Bargain.

R. NIEHAUS
900 Wainwright Building
St. Louis, Mo.

FOR SALE: Used Caterpillar, Buda and International diesel engines. General Machine & Supply Co., Wichita Falls, Texas.

LESS THAN $30,000
BUYS COMPLETE MECHANICAL ROTARY WITH DRILL PIPE

Like new. Used to drill less than 10,000 feet. All late type equipment consisting of two 170 h.p. Waukesha-Hesselman Oil Engines, 7" x 14" Power Pump, 3,500 feet good 4½" Drill Pipe, Mud Lines, Rigging-up material and everything complete to start work. Priced cheaper than light limited capacity rigs. Plenty of power for 1,800 to 5,000 foot drilling anywhere. There's a 10 well profit in the price reduction. Terms to fit requirements. Located at Wichita, Kansas. Will quote delivered price anywhere.

THE BRIDGEPORT MACHINE COMPANY
Wichita, Kansas.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Legal Blanks

BURKHART'S legal blanks and general forms serving Mid-Cont. oil field since 1908—Okla. Kans. N. Mex. Tex. Ala. Ark. Fla. Ga. Ill. Ind. Ky. La. Mich. Miss. Mo. Neb. N. Dak. Tenn. Wyo. Free catalog, samples on request. Burkhart Ptg. & Sta. Co. 115 S. Cinn. Tulsa, Oklahoma.

For Sale—Maps

R. B. ROBINSON MAPS
Jackson, Miss. 3-Hart Bldg., Across Street from Heidelberg Hotel. Ownership maps All Over Mississippi.

1940 OIL AND GAS FIELD MAP
Texas, Eastern New M. Price $1.00.
Wildcat Map $3.00 Published monthly.
ZINGERY OIL MAP CO., Fort Worth, Tex.

New York Markets

(Continued from Page 105)

of No. 2 heating oil from the Gulf to Montreal, loading to commence on or about September 15. One foreign fixture was reported last week, a tanker of Panamanian registry to Covenas to Lisbon due for September loading. The rate was reported at $16 per ton, comparable with rates of $15.75 and $16 reported for the same trade late in August.

After months of inactivity, an improvement was noted early last week in the wax market. As a result of an improved domestic demand principally, both export and domestic prices were stronger and some suppliers raised their prices. Whereas quotations of under 2 cents were general in the previous week, quotations last week were at a minimum of 2 cents with some ranging to 2½ cents on both 122-4 and 124-6 A.m.p. grades of crude scale. Fully refined wax prices, however, were reported unchanged.

Bunker C and diesel-oil prices were reported unchanged in the eastern area. Bunker C is reported obtainable at $1.15 per barrel though major suppliers continue to quote $1.25. The $1.15 price is reported by some to be an attempt to meet steps taken by the major suppliers' contract business and by others as a reflection of the availability of low-priced material of Mexican origin.

Lubricating-oil prices were also reported unchanged as demand continued low. Fears were expressed, however, that prices here might follow recent reductions in the Mid-Continent and Gulf areas.

Gulf Coast Markets

(Continued from Page 105)

lifting of cargoes for Japanese destination on previous purchases, and on contracts to Atlantic seaboard outlets. Several small inquiries for spot shipment were reported but verification of actual sales was not made. Neutral oils also continued sluggish.

CRUDE-OIL PRICES IN REPRESENTATIVE FIELDS

Complete crude-price schedules are now being published in the first issue of each month. The last complete schedule was published in the September 5 issue. All changes in crude-oil-price schedules will be published completely in the first issues following the announcement of the changes. Following are representative crude-price schedules in barrels (42 gal.):

East Texas	$1.10
Conroe	1.27
Tepetate, Louisiana	1.03
Smackover, Arkansas, heavy	.73
Illinois basin	1.15
Pecos County, Texas	.78
Lance Creek, Wyoming	.77
Bradford, Pennsylvania	1.85

Gravity Schedules

Top prices include all gravities above grades designated, and low prices include all gravities below grades designated:

	Signal Hill, California*	Oklahoma, Kansas	Gulf Coast, Texas
14-14.9	$0.65	....	...
15-15.9	.65	....	....
16-16.9	.65	....	....
17-17.9	.65	....	....
18-18.9	.65	....	....
19-19.9	.69	....	$0.86
20-20.9	.73	$0.70	.88
21-21.9	.78	.72	.90
22-22.9	.82	.74	.92
23-23.9	.86	.76	.94
24-24.9	.90	.78	.96
25-25.9	.95	.80	.98
26-26.9	.99	.82	1.00
27-27.9	1.03	.84	1.02
28-28.9	1.07	.86	1.04
29-29.9	1.10	.88	1.06
30-30.9	1.14	.90	1.08
31-31.9	....	.92	1.10
32-32.9	....	.94	1.12
33-33.9	....	.96	1.14
34-34.9	....	.98	1.16
35-35.9	....	1.00	1.18
36-36.9	....	1.02	1.20
37-37.9	....	1.04	1.22
38-38.9	....	1.06	1.24
39-39.9	....	1.08	1.26
40-40.9	....	1.10	1.28

*Effective Feb. 1, 1940.

Crude-Oil Price Changes

Stanolind Oil & Gas Co. effective September 1 advanced its price on North Texas crude oils 3 cents per barrel, bringing its schedule in line with that of other major purchasers.

Price of crude oil in Van Buren County, Michigan, has been advanced by purchasers from $1.08 to $1.12 per barrel, effective September 3. Fields in that county were exempted from the increase on August 24 when a general advance of 5 to 10 cents a barrel was posted.

INDEX TO ADVERTISERS

A

Abercrombie Pump Co.
AC Spark Plug Division of General Motors Corporation
Acme Fishing Tool Co. 87
Aero Exploration Co. 69
Air Reduction Sales Co.
Ajax Iron Works
Alco Products Division of American Locomotive Company
Allis-Chalmers Mfg. Co.
Allison, R. J.
American Air Filter Co., Inc.
American Blower Corporation
American Bosch Corporation
American Cable Division of American Chain & Cable Co., Inc.
American Cast Iron Pipe Company
American Flange & Mfg. Co.
American Hoist & Derrick Co.
American Iron & Machine Works Back Cover
American Locomotive Company, Diesel Engine Division
American Meter Company
American Roller Bearing Co.
American Rolling Mill Co., The
American Steel & Wire Company
Armstrong Bros. Tool Co.
Armstrong Machine Works
Ashcroft Gauge Division 74
Athey Truss Wheel Co.
Auer, C. L., and W. W. 75
Austin-Western Road Machinery
Axelson Manufacturing Company

B

B and M Construction Corp. 68
Baash-Ross Tool Company
Babcock & Wilcox Tube Company, The
Badger & Sons Co., E. B. 92
Baker Oil Tools, Inc. 20
Baldwin-Duckworth Division of Chain Belt Company
Bantam Bearings Corp. 4
Baroid Sales Division, National Lead Company
Barrett, William M., Inc.
Beaird Corporation, J. B.
Bechtel Co., W. A.
Bethlehem Supply Company
Bethlehem Steel Co. 1
Braden Steel Corporation
Bradford Motor Works, Inc.
Brance-Krachy Co., Inc.
Brauer Machine & Supply Company 91
Brewster Company, The
Bridgeport Machine Company, The
Bristol Company, The
Broderick & Bascom Rope Co.
Brodie Co., Ralph N.
Brown Instrument Company, The
Bruning, Charles Co., Inc.
Buckeye Traction Ditcher Co.
Bucyrus-Erie Co.
Buda Co., The
Burgess Battery Co.
Butler Manufacturing Co.
Byron Jackson Co.

C

Cable, Jo H. 82
Cameron Iron Works, Inc. 58
Cardwell Mfg. Co., Inc.
Carey Company, The Philip
Carnegie-Illinois Steel Corporation
Cast Iron Pipe Research Association, The
Caterpillar Tractor Co.
Cavins Company
Century Electric Company
Cessna Aircraft Company
Chain Belt Company 5
Chaplin-Fulton Mfg. Co., Inc.
Chapman Valve Mfg. Co., The
Chemical Process Co., Inc., The
Chevrolet Motor Division, General Motors Sales Corporation
Chicago Bridge & Iron Company
Chiksan Tool Co.
Clark Brothers Company
Classified Advertising 110-111
Cleveland Trencher Company
Climax Molybdenum Company
Columbia Steel Company
Columbian Steel Tank Co.
Continental National Bank of Fort Worth
Continental Oil Co.
Continental Motors Corp.
Continental Supply Company, The 40
Cooper, Fred E.
Cooper-Bessemer Corp., The
Core Laboratories, Inc.
Crane Co.
Crutcher-Rolfs-Cummings 68
Curtin, W. H., & Co., The

D

D & M Machine Works
Daring Valve & Mfg. Co.
Davis Regulator Mfg. Co., The
Dayton Rubber Mfg. Co., The
Dearborn Chemical Co.
Dempsey-Wilson Construction Co. 68
Diamond Chain & Mfg. Co.
Dodge Division, Chrysler Corporation
Dowell Incorporated
Dragon Mfg. Co., The
Dresser Mfg. Co., The
Drilling Equipment Directory 64
Duff-Norton Manufacturing Co., The 86
Du Pont de Nemours & Co., Inc.
Durametallic Corp.

E

Eagle-Picher Lead Co.
Eastman Oil Well Survey Co.
Economy Electric Lantern Co.
Elastic Stop Nut Corp. 90
Electrical Facilities Co. 68
Emsco Asbestos Company
Emsco Derrick & Equipment Company
Engineering Laboratories, Inc. 78
Ensign Carburetor Company, Ltd. 95
Ethyl Gasoline Corporation 12-13

F

Fairbanks, Morse & Co.
First National Bank of Fort Worth
First National Bank in Houston
First National Bank & Trust Co. of Tulsa, The
Fisher Governor Company
Fluid Packed Pump Co.
Fluor Corporation, Ltd., The
Ford Motor Co.
Fort Worth Chamber of Commerce
Fort Worth Clearing House Association
Fort Worth National Bank, The
Foster Wheeler Corp. 18
Four Wheel Drive Auto Company
Foxboro Co., The
Frick-Reid Supply Corporation

G

Gardner-Denver Company
Gariock Packing Company, The
Gaso Pump & Burner Mfg. Co.
Gasoline Products Co., The
Gates Rubber Co., The 6
Gatke Corporation
General American Transportation Corporation—Terminal Division 79
General Electric Company
General Paint Corporation
General Power, Inc.
Geological Scientific Service Company
Geophysical Service, Inc. Inside Back Cover
Gilmer Company, L. H.
Girdler Corporation, The 36
Goodall Rubber Co.
Goodrich Company, B. F., The
Goodyear Tire & Rubber Co.
Gott, H. P., Mfg. Co.
Graver Tank & Mfg. Co., Inc.
Gray Processes Corporation, The 16
Great Lakes Steel Corporation
Green Head Bit & Supply Co.
Greenspon's Son Corp., Jos.
Guiberson Corporation
Gulf Oil Corp.
Gulf States Utilities Co.

H

Halliburton Oil Well Cementing Co. Inside Front Cover
Hanlon-Buchanan, Inc.
Hanrahan, W. G. (Bill)
Harley Sales Co.
Harnischfeger Corporation
Harrisburg Steel Corporation
Hazard Wire Rope Division of American Chain & Cable Co., Inc.
Hewitt Rubber Corp.
Hill-Hubbell & Co.
Hoard Exploration Co.
Houston Engineers, Inc.
Houston Pipe Appliance Co.
Hughes Tool Co. Front Cover
Humble Oil & Refining Co.
Hydril Co.

I

Independent Exploration Company
Industrial Engineering Co. 69
Inferno Co., The
Ingersoll-Rand Co.
International Geophysics, Inc.
International Harvester Co.
International Nickel Company, Inc., The

J

Jadson Motor Products Company 82
Jarecki Manufacturing Company
Jensen Brothers Manufacturing Co.
Jerguson Gage & Valve Co. 83
Johns-Manville Corporation 83
Jones Company, The S. M.
Jones & Brooks, Inc. 69
Jones & Laughlin Steel Corporation

K

Kellogg, M. W., Company, The 2
Kennedy Valve Mfg. Co., The
Kerotest Manufacturing Company
Keuffel & Esser Co.
Key Company
Kobe, Incorporated

L

Laminated Shim Company, Inc. 90
Landis Machine Company, Inc.
Lane-Wells Co., The 54
Larkin Packer Company, Inc.
Layne & Bowler, Inc. 99
Leeds & Northrup Co.
Le Roi Company 82
Leschen, A., Sons Co.
Lincoln Electric Company, The
Line Scale Co., Inc.
Link-Belt Company
Lockheed Aircraft Corporation 14
Lone Star Cement Corporation
Long, S. A., Co., Inc.
Lucey Export Corporation
Ludlow Valve Mfg. Co., The
Lufkin Foundry & Machine Co.
Lufkin Rule Co. 75
Lummus Co., The 60-61
Lunkenheimer Co., The

Mc

McEvoy Company
McGregor Working Barrel Company
McKissick Products Corp.

M

MacClatchie Manufacturing Company
Macwhyte Co.
Magnolia Airco Gas Products Co.
Maloney Tank Mfg. Co.
Manhattan Rubber Mfg. Division
Manning, Maxwell and Moore, Inc. 74
Marley Company, The
Marmon-Herrington Co., Inc.
Marsh, James P., Corp.
Martin-Decker Corp.
Mayfair Hotel 87
Medart Company
Meehanite Research Institute
Merco Centrifugal Co.
Merco Nordstrom Valve Co. 56A-56B
Mercoid Corporation
Metric Metal Works
Mid-Continent Engineering Co., Inc.
Mid-Continent Supply Company
Midwest Piping & Supply Company, Inc., The
Miller Sand Pump Co.
Minneapolis-Moline Power Implement Company
Mission Mfg. Co., The 70
Monsanto Chemical Company 11
Morse Chain Company
Murray Rubber Company

N

National Bank of Tulsa
National Carbon Co., Inc.
National Production Co.
National Steel Corporation
National Supply Co., The
National Transit Pump & Machine Co.
National Tube Co.
Nelson, J. B.
New Bedford Cordage Co. 90
Newman, Hender & Co., Ltd.
Norton Company
Novo Engine Co.
Nugent, Wm. W., & Co., Inc.

O

O.C.S. Mfg. Co., The
Ohio Injector Co., The
Oil Center Tool Co.
Oil Well Supply Co. 9
Oliver United Filters, Inc.
Osage Metal Company 91
Otis Pressure Control, Inc.

P

Page Fence Association 75
Page Steel & Wire Division of American Chain & Cable Co.
Parkersburg Rig & Reel Co.
Parkhill Truck Co.
Parkhill-Wade
Patterson-Ballagh Corporation 95
Pease, C. F., Company, The
Peerless Pump Division of Food Machinery Corp. 90
Penberthy Injector Co.
Pennsylvania Grade Crude Oil Association
Perco, Inc.
Petroleum Advisers, Inc. 8
Petroleum Electric Power Association
Petroleum Rectifying Company 63
Phelps Dodge Refining Corporation 83
Pittsburgh-Des Moines Steel Company
Pittsburgh Equitable Meter Co.
Pittsburgh Steel Company
Plymouth Cordage Co.
Poist Tool Co. 91
Powell, Wm., Co., The
Price, H. C., Co.
Pritchard, J. F., & Co.
Producing Equipment Directory 64
Pure Oil Co. 15

R

Reading-Pratt & Cady Division of American Chain & Cable Co. 10
Rector Well Equipment Co., Inc. 91
Reda Pump Co.
Reed Roller Bit Company
Regan Forge & Engineering Co.
Reilly Tar & Chemical Corporation
Republic Rubber Division of Lee Rubber & Tire Corp.
Republic Steel Corporation 51
Rockford Drilling Machine Division of Borg-Warner Company
Roebling's Sons Company, John A.
Ryerson & Son, Inc., Joseph T. 87

S

Safety Gas Main Stopper Co. 69
Schlumberger Well Surveying Corporation
Sealed Power Corp.
Security Engineering Co.
Seismic Explorations, Inc.
Seismograph Service Corp.
Shafer Bearing Corporation
Shand & Jurs Co.
Shell Oil Company, Incorporated
Sinclair Refining Company, Inc. 17
Skinner Co., M. B.
Smith, A. O. Corporation
Smith Company, E. M.
Smith Company, Howard
Smith, H. C., Oil Tool Co. 90
Smooth-On Mfg. Co., Inc.
Socony-Vacuum Oil Co., Inc.
South Chester Tube Co. 7
Southwestern Gas & Electric Company
Spang Chalfant, Inc.
Spang & Company
Sperry-Sun Well Surveying Co.
Spicer Mfg. Corp. 74
Standard Bag Mfg. Co. 90
Standco Brake Lining Co. 90
Stanley Belting Corporation
Star Drilling Machine Co., The
Stearns-Roger Manufacturing Co.
Steel Founders' Society

T

Taylor Forge & Pipe Works
Taylor Instrument Companies
Technical Oil Tool Corporation, Ltd.
Texaco Development Corporation 73
Thermoid Company
Timken-Detroit Axle Co.
Timken Roller Bearing Company.
Timken Roller Bearing Company, Steel and Tube Division
Tobin, Edgar, Aerial Surveys
Toledo Pipe Threading Machine Co., The
Tretolite Company
Trinity Portland Cement Company
Tubbs Cordage Co. 91
Tube-Turns, Inc.
Tulsa Boiler & Machinery Co.
Tulsa Chamber of Commerce
Twin Disc Clutch Co.

U

Union Wire Rope Corporation 3
Unit Rig & Equipment Company
United Gas Pipe Line Co.
United Geophysical Co.
United States Rubber Company
United States Steel Corp., Subsidiaries 9-35
United States Steel Export Company
Universal Atlas Cement Co. 35
Universal Exploration Co.
Universal Oil Products Co. 39

V

Vickers, Inc.
Viking Pump Co.
Visco Products Company
Vogt, Henry, Machine Co.

W

Walker, W. L., Co.
Wall-Colmonoy Corp.
Wall Rope Works, Inc.
Walworth Co.
Warren Petroleum Corporation
Waukesha Motor Co.
Wedge Protectors, Inc.
Well Equipment Manufacturing Corp. 95
Well Surveys, Inc.
Western Geophysical Company
Westinghouse Electric & Mfg. Co.
Wheeling Machine Products Company
Whitney Chain & Mfg. Co., The
Wickwire Spencer Steel Company
Wilson Manufacturing Co., Inc.
Wisconsin Motor Corporation
Witte Engine Works
W-K-M Company, Inc.
Worthington Pump & Machinery Corporation
Wyatt Metal & Boiler Works

Y

Youngstown Sheet & Tube Co.

The Oil Man's Calendar appears on Page 44